Analytical Resources, LLC
Analytical Chemists and Consultants

07 April 2023

Andrea Fletcher
HydroGeoLogic, Inc.
6340 Glenwood, Building 7, Suite 200
Overland Park, KS 66202

RE: Portland Harbor Superfund Site 2021-2023

Please find enclosed sample receipt documentation and analytical results for samples from the project referenced above.

Sample analyses were performed according to ARI's Quality Assurance Plan and any provided project specific Quality Assurance Plan. Each analytical section of this report has been approved and reviewed by an analytical peer, the appropriate Laboratory Supervisor or qualified substitute, and a technical reviewer.

Should you have any questions or problems, please feel free to contact us at your convenience.

Associated Work Order(s)	Associated SDG ID(s)
23C0692	N/A

I certify that this data package is in compliance with the terms and conditions of the contract, both technically and for completeness, for other than the conditions detailed in the enclosed Narrative. ARI, an accredited laboratory, certifies that the report results for which ARI is accredited meets all the requirements of the accrediting body. A list of certified analyses, accreditations, and expiration dates is included in this report.

Release of the data contained in this hardcopy data package has been authorized by the Laboratory Manager or his/her designee, as verified by the following signature.

Analytical Resources, LLC

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.

Kelly Bottem, Client Services Manager

PJLA Testing
DoD ELAP 66169

Accredited in accordance with nelac
Cert# 100006-012

2302692

ALS Environmental Chain of Custody

1317 South 13th Avenue • Kelso, WA 98626 • 1-360-577-7222 • FAX 1-360-636-1068

ALS Contact: Kurt Clarkson

Project Number: K2302917
Project Manager: Kurt Clarkson
QAP: LAB QAP

Lab Code	Sample ID	# of Cont.	Matrix	Sample Date	Sample Time	Lab ID	Relinquish 2 None
K2302917-001	SIB-SW-WR198-030923	1-L Amber	Storm Water	3/9/23	1605	ARI	X
K2302917-002	SIB-SW-WR186-030923		Storm Water	3/9/23	1626	ARI	X
K2302917-003	SIB-SW-WR15-030923		Storm Water	3/9/23	1632	ARI	X
K2302917-004	SIB-SW-WR428-030923		Storm Water	3/9/23	1820	ARI	X
K2302917-005	SIB-SW-WR71-030923		Storm Water	3/9/23	1750	ARI	X
K2302917-006	SIB-SW-WR30-030923		Storm Water	3/9/23	1653	ARI	X

Folder Comments:
samles 001 thru -006 Centrifuge prior to analysis

Ship/Relinquish 1-L glass container for each sample.

Special Instructions/Comments Relinquish samples
Please provide the electronic (PDF and EDD) report to the following e-mail address:
~~ALKLS.Data@alsglobal.com.~~ KC 3/27/23
HGL: Andrea Fletcher
afletcher@hgl.com
Linda Nyland
Lnyland@hgl.com

H - Test is On Hold P - Test is Authorized for Prep Only

Turnaround Requirements
____**RUSH** (Surcharges Apply)
PLEASE CIRCLE WORK DAYS
1 2 3 4 5
____ **STANDARD**
Requested FAX Date: _____
Requested Report Date: 04/12/23

Report Requirements
____ I. Results Only
____ II. Results + QC Summaries
____ III. Results + QC and Calibration Summaries
____ IV. Data Validation Report with Raw Data
PQL/MDL/J Y
EDD Y

Invoice Information
PO# 51K2302917
Bill to

Relinquished By: 3/28/23 Received By: Airbill Number:

2360692

K2302917

Y **Ship To: ARI**
Analytical Resources, Incorporated
4611 So. 134th Place
Suite 100
Tukwila, WA 98168

PC KC Date 3/27
SMO _____ Date 3/28

Instructions:

Ice	X
Dry Ice	
No Ice	

Shipping:

Overnight	X
2nd Day	
Ground	

Bill to Client Account _____

Comments:

Analytical Resources, LLC
Analytical Chemists and Consultants

Cooler Receipt Form

ARI Client: AIS Environmental

Project Name: K2302917

COC No(s): _____ NA

Delivered by: Fed-Ex UPS Courier Hand Delivered Other: _____

Assigned ARI Job No: 2310692

Tracking No: 9201 6195 1658 6522 NA

Preliminary Examination Phase:

Were intact, properly signed and dated custody seals attached to the outside of the cooler?	YES	NO
Were custody papers included with the cooler?	YES	NO
Were custody papers properly filled out (ink, signed, etc.)	YES	NO

Temperature of Cooler(s) (°C) (recommended 2.0-6.0 °C for chemistry)

Time 9:30 | 1.1 | ____ | ____ | ____ | ____ | ____

If cooler temperature is out of compliance fill out form 00070F

Temp Gun ID#: 70070E

Cooler Accepted by: [signature] Date: 03/29/23 Time: 9:36

Complete custody forms and attach all shipping documents

Log-In Phase:

Was a temperature blank included in the cooler?		YES	NO
What kind of packing material was used? ... Bubble Wrap Wet Ice Gel Packs Baggies Foam Block Paper Other: _____			
Was sufficient ice used (if appropriate)?	NA	YES	NO
How were bottles sealed in plastic bags?	Individually	Grouped	Not
Did all bottles arrive in good condition (unbroken)?		YES	NO
Were all bottle labels complete and legible?		YES	NO
Did the number of containers listed on COC match with the number of containers received?		YES	NO
Did all bottle labels and tags agree with custody papers?		YES	NO
Were all bottles used correct for the requested analyses?		YES	NO
Do any of the analyses (bottles) require preservation? (attach preservation sheet, excluding VOCs) ...	NA	YES	NO
Were all VOC vials free of air bubbles?	NA	YES	NO
Was sufficient amount of sample sent in each bottle?		YES	NO
Date VOC Trip Blank was made at ARI	NA	_____	

Were the sample(s) split by ARI? NA YES Date/Time: _____ Equipment: _____ Split by: _____

Samples Logged by: [signature] Date: 03/29/23 Time: 11:23 Labels checked by: TGS

***** Notify Project Manager of discrepancies or concerns *****

Sample ID on Bottle	Sample ID on COC	Sample ID on Bottle	Sample ID on COC

Additional Notes, Discrepancies, & Resolutions:

By: Date:

Analytical Resources, LLC
Analytical Chemists and Consultants

HydroGeoLogic, Inc.	Project:	Portland Harbor Superfund Site 2021-2023	
6340 Glenwood, Building 7, Suite 200	Project Number:	K2302917	**Reported:**
Overland Park, KS 66202	Project Manager:	Andrea Fletcher	04/07/2023 12:55

ANALYTICAL REPORT FOR SAMPLES

Laboratory ID	Sample ID	Matrix	Date Sampled	Date Received
23C0692-01	SIB-SW-WR198-030923	Water	03/09/23 16:05	03/29/23 09:36
23C0692-02	SIB-SW-WR186-030923	Water	03/09/23 16:26	03/29/23 09:36
23C0692-03	SIB-SW-WR15-030923	Water	03/09/23 16:32	03/29/23 09:36
23C0692-04	SIB-SW-WR428-030923	Water	03/09/23 18:20	03/29/23 09:36
23C0692-05	SIB-SW-WR71-030923	Water	03/09/23 17:50	03/29/23 09:36
23C0692-06	SIB-SW-WR30-030923	Water	03/09/23 16:53	03/29/23 09:36

HydroGeoLogic, Inc.	Project: Portland Harbor Superfund Site 2021-2023	
6340 Glenwood, Building 7, Suite 200	Project Number: K2302917	**Reported:**
Overland Park KS, 66202	Project Manager: Andrea Fletcher	07-Apr-2023 12:55

Case Narrative

PCB Aroclors - EPA Method SW8082A

The sample(s) were extracted and analyzed outside the recommended holding times. The samples were sent to the lab outside of the holding time. The client was notified.

Initial and continuing calibrations were within method requirements with the exception of CCV1 fails high for 1248 on zb5. All associated data is reported from zb35 as primary.

Internal standard areas were within limits with the exception of HBBP fails low for 23C0692-06 and ICV1 fails high on zb5. All associated data is reported from zb35 as primary.

The surrogate percent recoveries were within control limits.

The method blank(s) were clean at the reporting limits.

The blank spike (BS/LCS) percent recoveries were within control limits.

Analytical Resources, LLC
Analytical Chemists and Consultants

QUALIFIERS AND NOTES

Qualifier	Definition
U	This analyte is not detected above the reporting limit (RL) or if noted, not detected above the limit of detection (LOD).
P1	The reported value is greater than 40% difference between the concentrations determined on two GC columns where applicable.
H	Hold time violation - Hold time was exceeded.
*	Flagged value is not within established control limits.
DET	Analyte DETECTED
ND	Analyte NOT DETECTED at or above the reporting limit
NR	Not Reported
dry	Sample results reported on a dry weight basis
RPD	Relative Percent Difference

Analytical Resources, LLC
Analytical Chemists and Consultants

Dual Column

SIB-SW-WR198-030923

ORGANIC ANALYSIS DATA SHEET
EPA 8082A

Laboratory:	Analytical Resources, LLC			SDG:	23C0692
Client:	HydroGeoLogic, Inc.				
Project:	Portland Harbor Superfund Site 2021-2023				
Matrix:	Water	Laboratory ID:	23C0692-01 A	File ID:	04062307ECD7.D
Sampled:	03/09/23 16:05	Prepared:	03/30/23 15:00	Analyzed:	04/06/23 13:30
% Solids:		Preparation:	EPA 3510C SepF	Initial/Final:	1000 mL / 0.5 mL
Batch:	BLC0803	Sequence:	SLD0092	Calibration:	GB00069
Instrument:	ECD7	Column 1:	ZB5	Column 2:	ZB35

CAS NO.	COMPOUND	Col #	DILUTION	CONC. (ug/L)	MDL	LOD	LOQ	Q
12674-11-2	Aroclor 1016	1	1	0.005	0.002	0.005	0.010	H, U
11104-28-2	Aroclor 1221	1	1	0.005	0.002	0.005	0.010	H, U
11141-16-5	Aroclor 1232	1	1	0.005	0.002	0.005	0.010	H, U
53469-21-9	Aroclor 1242	1	1	0.005	0.002	0.005	0.010	H, U
12672-29-6	Aroclor 1248	1	1	0.005	0.002	0.005	0.010	H, U
11097-69-1	Aroclor 1254	1	1	0.005	0.002	0.005	0.010	H, U
11096-82-5	Aroclor 1260	1	1	0.005	0.003	0.005	0.010	H, U
37324-23-5	Aroclor 1262	1	1	0.005	0.003	0.005	0.010	H, U
11100-14-4	Aroclor 1268	1	1	0.005	0.003	0.005	0.010	H, U

SURROGATES	Col #	ADDED (ug/L)	CONC (ug/L)	% REC	QC LIMITS	Q
Decachlorobiphenyl	*1*	*0.020000*	*0.0126*	*62.9*	*29 - 120*	
Tetrachlorometaxylene	*1*	*0.020000*	*0.0133*	*66.5*	*32 - 120*	

Analytical Resources Inc.
Dual Column 608/8082 PCB Quantitation Report

Data file 1: /230406.b/04062307ECD7.D
Data file 2: /230406.b/230406.b/04062307ECD7.D
Method: \\target\share\chem4\ecd7.i\230406.b\PCB.m
Compound Sublist: PCB.sub
Instrument, Inj. Vol.: ecd7.i, 2ul
Quant Method: Internal Std

ARI ID: 23C0692-01
Client ID:
Injection Date: 06-APR-2023 13:30
Report Date: 04/06/2023 14:46
Matrix: NONE
Dilution Factor: 1.0

SURROGATES

ZB5 Col RT	Shift	Response	ZB35 Col RT	Shift	Response	ZB5 on col	ZB35 on col	RPD	Compound/Flag
5.808	-0.002	251395	5.693	-0.002	143351	26.6	23.9	10.7	Tetrachloro-m-xylene
13.891	-0.008	332697	14.117	-0.005	260040	25.1	25.2	0.2	Decachlorobiphenyl

* Indicates RPD > 40%

INTERNAL STANDARD SUMMARY

Column 1

Standard Cpnd	Standard Area*	Sample Area	%D
Bromo-Nitrobenzene	673778	633246	-6.0
Hexabromobiphenyl	1429847	1343280	-6.1

Column 2

Standard Cpnd	Standard Area*	Sample Area	%D
Bromo-Nitrobenzene	315256	409102	29.8
Hexabromobiphenyl	513946	677507	31.8

* Standard Areas taken from Initial Cal Level 3
Initial Calibration Date: 24-FEB-2023
<- Indicates standard response outside Limits (-50 to +100%)

	ZB5 Col					ZB35 Col				
Aroclor	Peak#	RT	Shift	Area	Amount	Peak#	RT	Shift	Area	Amount
Aroclor-1016	1	---			0.0	1	---			0.0
Aroclor-1016	2	---			0.0	2	---			0.0
Aroclor-1016	3	---			0.0	3	---			0.0
Aroclor-1016	4	---			0.0	4	---			0.0
	Col1Ave: <3 Quant Peaks					Col2Ave: <3 Quant Peaks				
Aroclor-1221	1	---			0.0	1	---			0.0
Aroclor-1221	2	---			0.0	2	---			0.0
Aroclor-1221	3	---			0.0	3	---			0.0
	Col1Ave: <3 Quant Peaks					Col2Ave: <3 Quant Peaks				
Aroclor-1232	1	---			0.0	1	---			0.0
Aroclor-1232	2	---			0.0	2	---			0.0
Aroclor-1232	3	---			0.0	3	---			0.0
Aroclor-1232	4	---			0.0	4	---			0.0
	Col1Ave: <3 Quant Peaks					Col2Ave: <3 Quant Peaks				
Aroclor-1242	1	---			0.0	1	---			0.0
Aroclor-1242	2	---			0.0	2	---			0.0
Aroclor-1242	3	---			0.0	3	---			0.0
Aroclor-1242	4	---			0.0	4	---			0.0
	Col1Ave: <3 Quant Peaks					Col2Ave: <3 Quant Peaks				
Aroclor-1248	1	---			0.0	1	---			0.0
Aroclor-1248	2	---			0.0	2	---			0.0
Aroclor-1248	3	---			0.0	3	---			0.0
Aroclor-1248	4	---			0.0	4	---			0.0
	Col1Ave: <3 Quant Peaks					Col2Ave: <3 Quant Peaks				
Aroclor-1254	1	---			0.0	1	---			0.0
Aroclor-1254	2	---			0.0	2	---			0.0
Aroclor-1254	3	---			0.0	3	---			0.0
Aroclor-1254	4	---			0.0	4	---			0.0
Aroclor-1254	5	---			0.0	5	---			0.0
	Col1Ave: <3 Quant Peaks					Col2Ave: <3 Quant Peaks				
Aroclor-1260	1	---			0.0	1	---			0.0
Aroclor-1260	2	---			0.0	2	---			0.0
Aroclor-1260	3	---			0.0	3	---			0.0
Aroclor-1260	4	---			0.0	4	---			0.0
Aroclor-1260	5	---			0.0	NS	---			----
	Col1Ave: <3 Quant Peaks					Col2Ave: <3 Quant Peaks				
Aroclor-1262	1	---			0.0	1	---			0.0
Aroclor-1262	2	---			0.0	2	---			0.0
Aroclor-1262	3	---			0.0	3	---			0.0
Aroclor-1262	4	---			0.0	4	---			0.0
	Col1Ave: <3 Quant Peaks					Col2Ave: <3 Quant Peaks				
Aroclor-1268	1	---			0.0	1	---			0.0
Aroclor-1268	2	---			0.0	2	---			0.0
Aroclor-1268	3	---			0.0	3	---			0.0
Aroclor-1268	4	---			0.0	4	---			0.0
	Col1Ave: <3 Quant Peaks					Col2Ave: <3 Quant Peaks				

Total PCB Area Col1 (5.910 - 13.800) = 170856 Col1 Total PCB = 0.0 ppm*

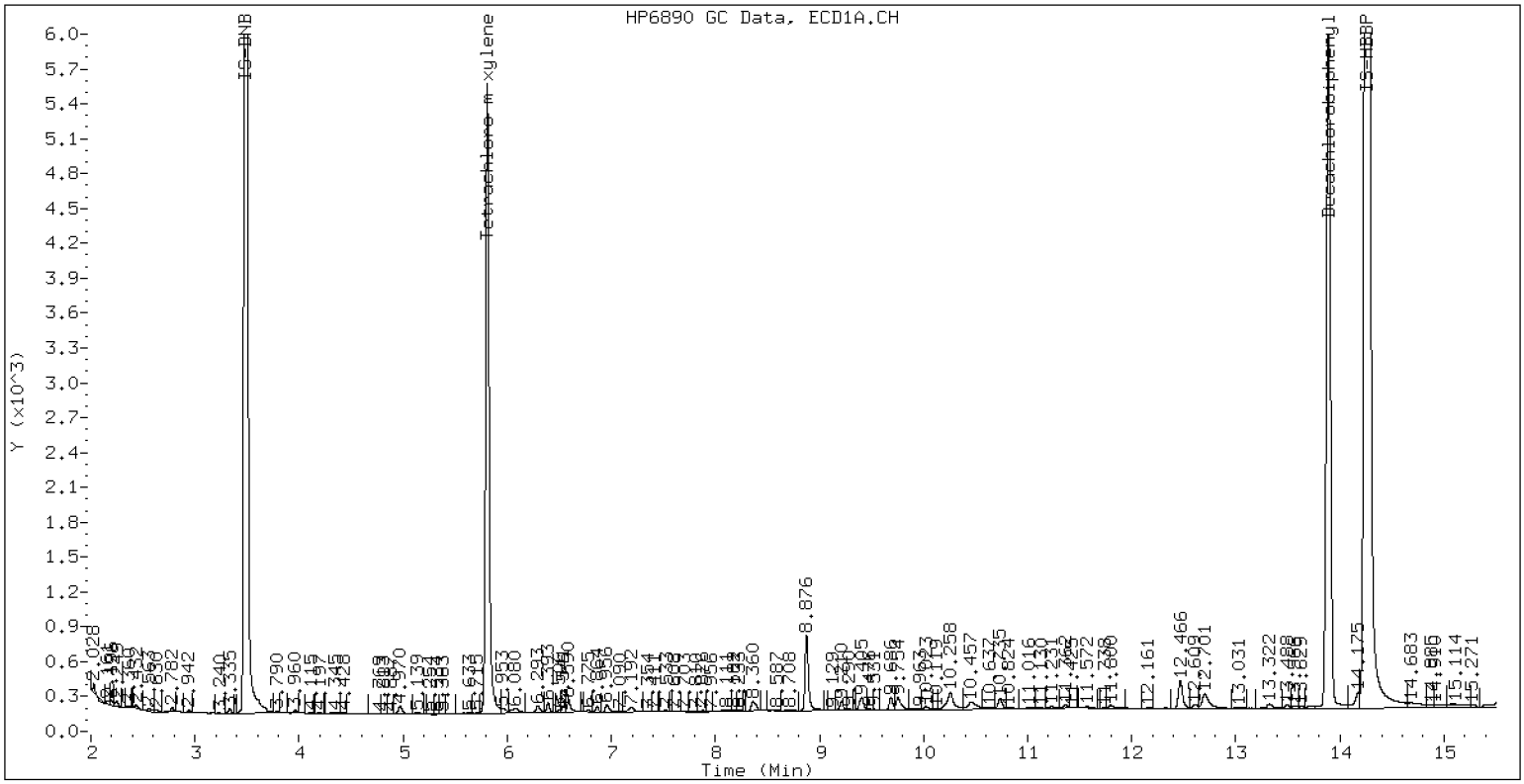
Total PCB Area Col2 (5.795 - 14.023) = 79030 Col2 Total PCB = 0.0 ppm*

* Quantitated against AR1660 0.25ppm in Ical

PCB-Form 10 Mod.

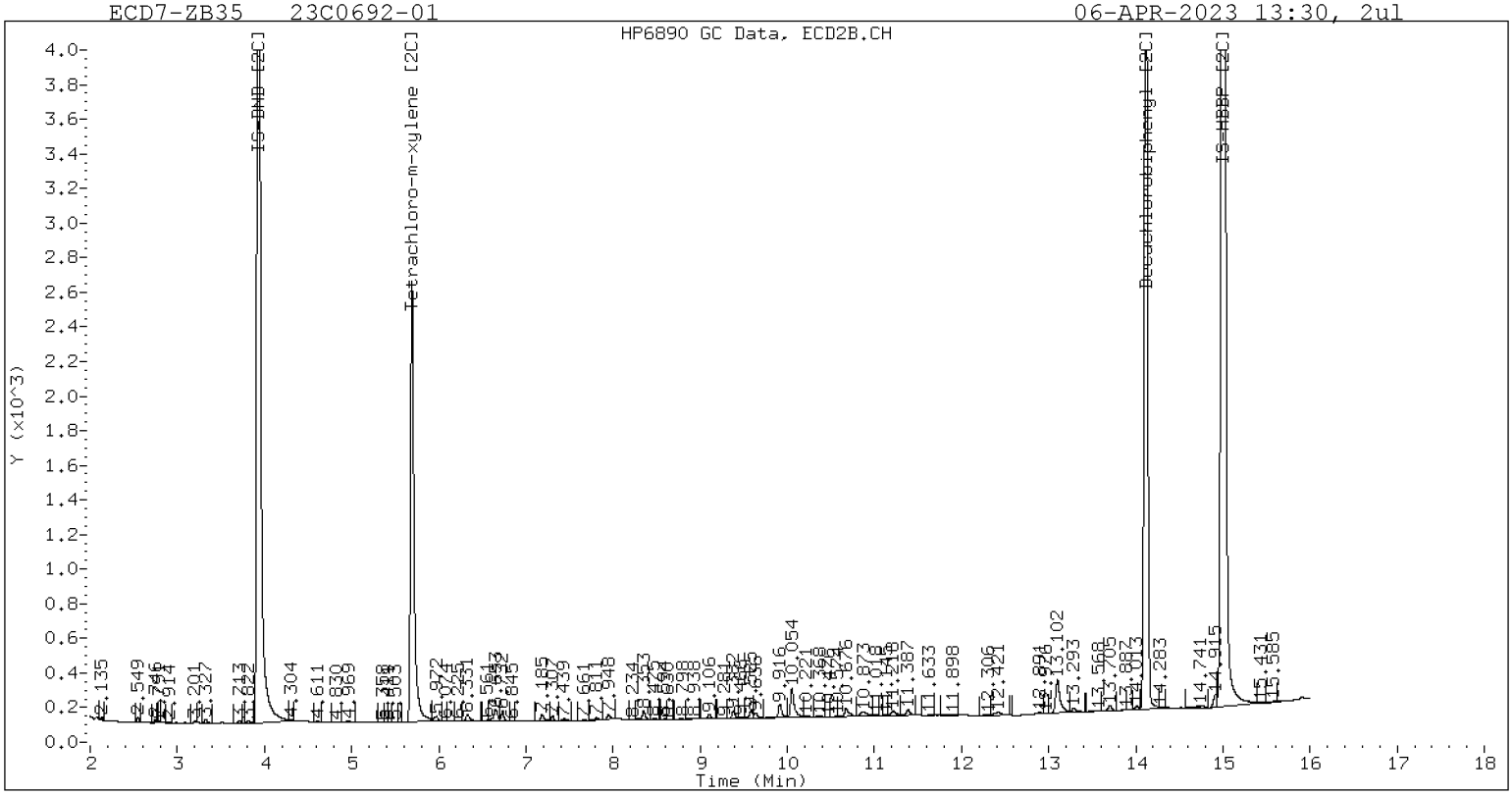
PCB Dual Column Chromatograms

ECD7-ZB5 23C0692-01 06-APR-2023 13:30, 2ul



ZB-5 Manual Integration: NO

ECD7-ZB35 23C0692-01 06-APR-2023 13:30, 2ul



ZB-35 Manual Integration: NO

Analytical Resources, LLC
Analytical Chemists and Consultants

SIB-SW-WR186-030923

Dual Column

ORGANIC ANALYSIS DATA SHEET
EPA 8082A

Laboratory:	Analytical Resources, LLC			SDG:	23C0692
Client:	HydroGeoLogic, Inc.				
Project:	Portland Harbor Superfund Site 2021-2023				
Matrix:	Water	Laboratory ID:	23C0692-02 A	File ID:	04062308ECD7.D
Sampled:	03/09/23 16:26	Prepared:	03/30/23 15:00	Analyzed:	04/06/23 13:51
% Solids:		Preparation:	EPA 3510C SepF	Initial/Final:	1000 mL / 0.5 mL
Batch:	BLC0803	Sequence:	SLD0092	Calibration:	GB00069
Instrument:	ECD7	Column 1:	ZB5	Column 2:	ZB35

CAS NO.	COMPOUND	Col #	DILUTION	CONC. (ug/L)	MDL	LOD	LOQ	Q
12674-11-2	Aroclor 1016	1	1	0.005	0.002	0.005	0.010	H, U
11104-28-2	Aroclor 1221	1	1	0.005	0.002	0.005	0.010	H, U
11141-16-5	Aroclor 1232	1	1	0.005	0.002	0.005	0.010	H, U
53469-21-9	Aroclor 1242	1	1	0.005	0.002	0.005	0.010	H, U
12672-29-6	Aroclor 1248	1	1	0.005	0.002	0.005	0.010	H, U
11097-69-1	Aroclor 1254	1	1	0.005	0.002	0.005	0.010	H, U
11096-82-5	Aroclor 1260	1	1	0.005	0.003	0.005	0.010	H, U
37324-23-5	Aroclor 1262	1	1	0.005	0.003	0.005	0.010	H, U
11100-14-4	Aroclor 1268	1	1	0.005	0.003	0.005	0.010	H, U

SURROGATES	Col #	ADDED (ug/L)	CONC (ug/L)	% REC	QC LIMITS	Q
Decachlorobiphenyl	*1*	*0.020000*	*0.0110*	*55.2*	*29 - 120*	
Tetrachlorometaxylene	*1*	*0.020000*	*0.0132*	*65.9*	*32 - 120*	

Analytical Resources Inc.
Dual Column 608/8082 PCB Quantitation Report

Data file 1: /230406.b/04062308ECD7.D
Data file 2: /230406.b/230406.b/04062308ECD7.D
Method: \\target\share\chem4\ecd7.i\230406.b\PCB.m
Compound Sublist: PCB.sub
Instrument, Inj. Vol.: ecd7.i, 2ul
Quant Method: Internal Std

ARI ID: 23C0692-02
Client ID:
Injection Date: 06-APR-2023 13:51
Report Date: 04/06/2023 14:48
Matrix: NONE
Dilution Factor: 1.0

SURROGATES

ZB5 Col RT	ZB5 Col Shift	ZB5 Col Response	ZB35 Col RT	ZB35 Col Shift	ZB35 Col Response	ZB5 on col	ZB35 on col	RPD	Compound/Flag
5.808	-0.003	245112	5.692	-0.002	139717	26.4	23.3	12.5	Tetrachloro-m-xylene
13.886	-0.013	217761	14.113	-0.010	205372	22.1	21.9	0.8	Decachlorobiphenyl

* Indicates RPD > 40%

INTERNAL STANDARD SUMMARY

Column 1

Standard Cpnd	Standard Area*	Sample Area	%D
Bromo-Nitrobenzene	673778	622901	-7.6
Hexabromobiphenyl	1429847	1000735	-30.0

Column 2

Standard Cpnd	Standard Area*	Sample Area	%D
Bromo-Nitrobenzene	315256	409509	29.9
Hexabromobiphenyl	513946	614967	19.7

* Standard Areas taken from Initial Cal Level 3
Initial Calibration Date: 24-FEB-2023
<- Indicates standard response outside Limits (-50 to +100%)

	ZB5 Col					ZB35 Col				
Aroclor	Peak#	RT	Shift	Area	Amount	Peak#	RT	Shift	Area	Amount
Aroclor-1016	1	---			0.0	1	---			0.0
Aroclor-1016	2	---			0.0	2	---			0.0
Aroclor-1016	3	---			0.0	3	---			0.0
Aroclor-1016	4	---			0.0	4	---			0.0
	Col1Ave: <3 Quant Peaks					Col2Ave: <3 Quant Peaks				
Aroclor-1221	1	---			0.0	1	---			0.0
Aroclor-1221	2	---			0.0	2	---			0.0
Aroclor-1221	3	---			0.0	3	---			0.0
	Col1Ave: <3 Quant Peaks					Col2Ave: <3 Quant Peaks				
Aroclor-1232	1	---			0.0	1	---			0.0
Aroclor-1232	2	---			0.0	2	---			0.0
Aroclor-1232	3	---			0.0	3	---			0.0
Aroclor-1232	4	---			0.0	4	---			0.0
	Col1Ave: <3 Quant Peaks					Col2Ave: <3 Quant Peaks				
Aroclor-1242	1	---			0.0	1	---			0.0
Aroclor-1242	2	---			0.0	2	---			0.0
Aroclor-1242	3	---			0.0	3	---			0.0
Aroclor-1242	4	---			0.0	4	---			0.0
	Col1Ave: <3 Quant Peaks					Col2Ave: <3 Quant Peaks				
Aroclor-1248	1	---			0.0	1	---			0.0
Aroclor-1248	2	---			0.0	2	---			0.0
Aroclor-1248	3	---			0.0	3	---			0.0
Aroclor-1248	4	---			0.0	4	---			0.0
	Col1Ave: <3 Quant Peaks					Col2Ave: <3 Quant Peaks				
Aroclor-1254	1	---			0.0	1	---			0.0
Aroclor-1254	2	---			0.0	2	---			0.0
Aroclor-1254	3	---			0.0	3	---			0.0
Aroclor-1254	4	---			0.0	4	---			0.0
Aroclor-1254	5	---			0.0	5	---			0.0
	Col1Ave: <3 Quant Peaks					Col2Ave: <3 Quant Peaks				
Aroclor-1260	1	---			0.0	1	---			0.0
Aroclor-1260	2	---			0.0	2	---			0.0
Aroclor-1260	3	---			0.0	3	---			0.0
Aroclor-1260	4	---			0.0	4	---			0.0
Aroclor-1260	5	---			0.0	NS	---			----
	Col1Ave: <3 Quant Peaks					Col2Ave: <3 Quant Peaks				
Aroclor-1262	1	---			0.0	1	---			0.0
Aroclor-1262	2	---			0.0	2	---			0.0
Aroclor-1262	3	---			0.0	3	---			0.0
Aroclor-1262	4	---			0.0	4	---			0.0
	Col1Ave: <3 Quant Peaks					Col2Ave: <3 Quant Peaks				
Aroclor-1268	1	---			0.0	1	---			0.0
Aroclor-1268	2	---			0.0	2	---			0.0
Aroclor-1268	3	---			0.0	3	---			0.0
Aroclor-1268	4	---			0.0	4	---			0.0
	Col1Ave: <3 Quant Peaks					Col2Ave: <3 Quant Peaks				

Total PCB Area Col1 (5.910 - 13.800) = 228956 Col1 Total PCB = 0.0 ppm*

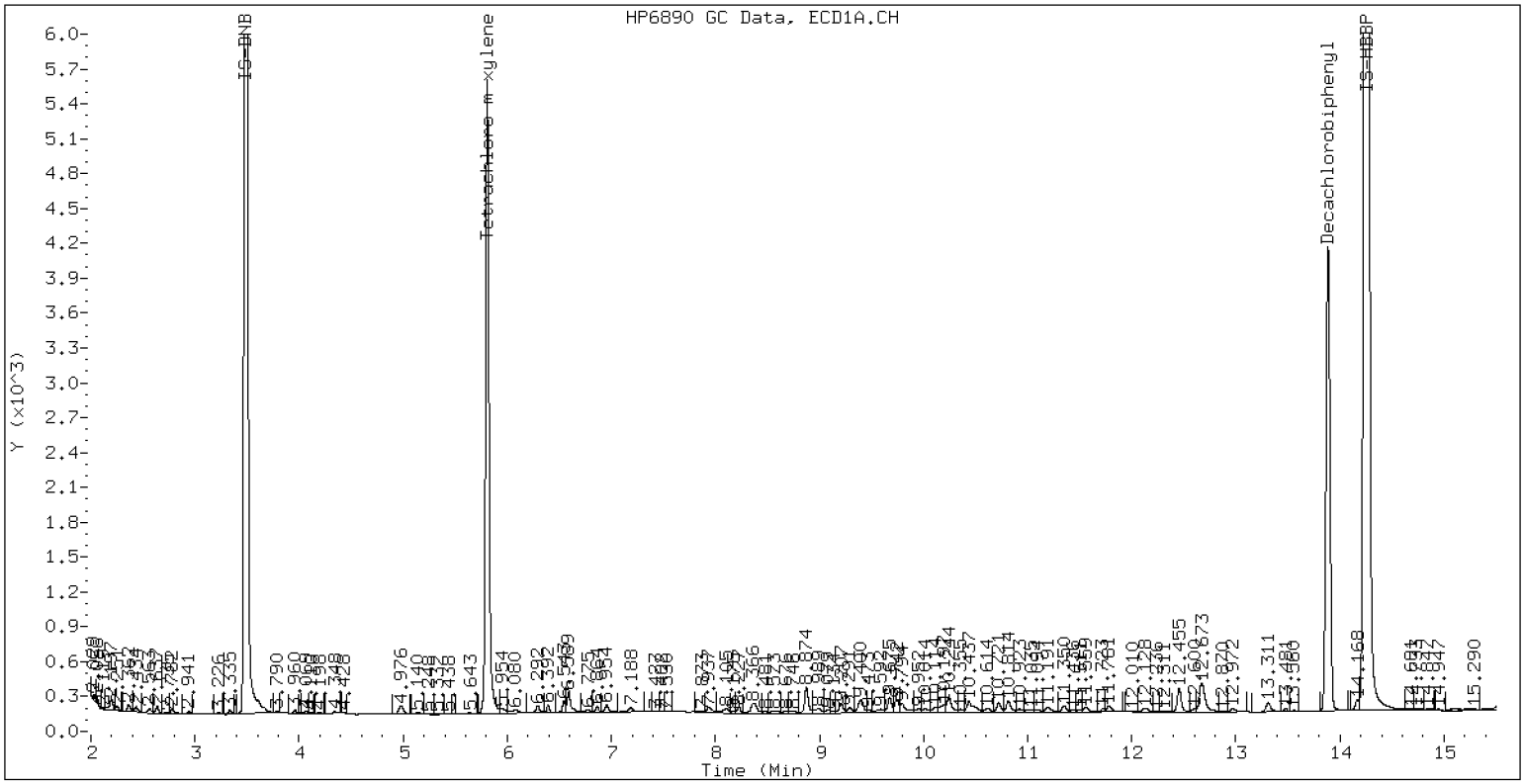
Total PCB Area Col2 (5.795 - 14.023) = 104805 Col2 Total PCB = 0.0 ppm*

* Quantitated against AR1660 0.25ppm in Ical

PCB-Form 10 Mod.

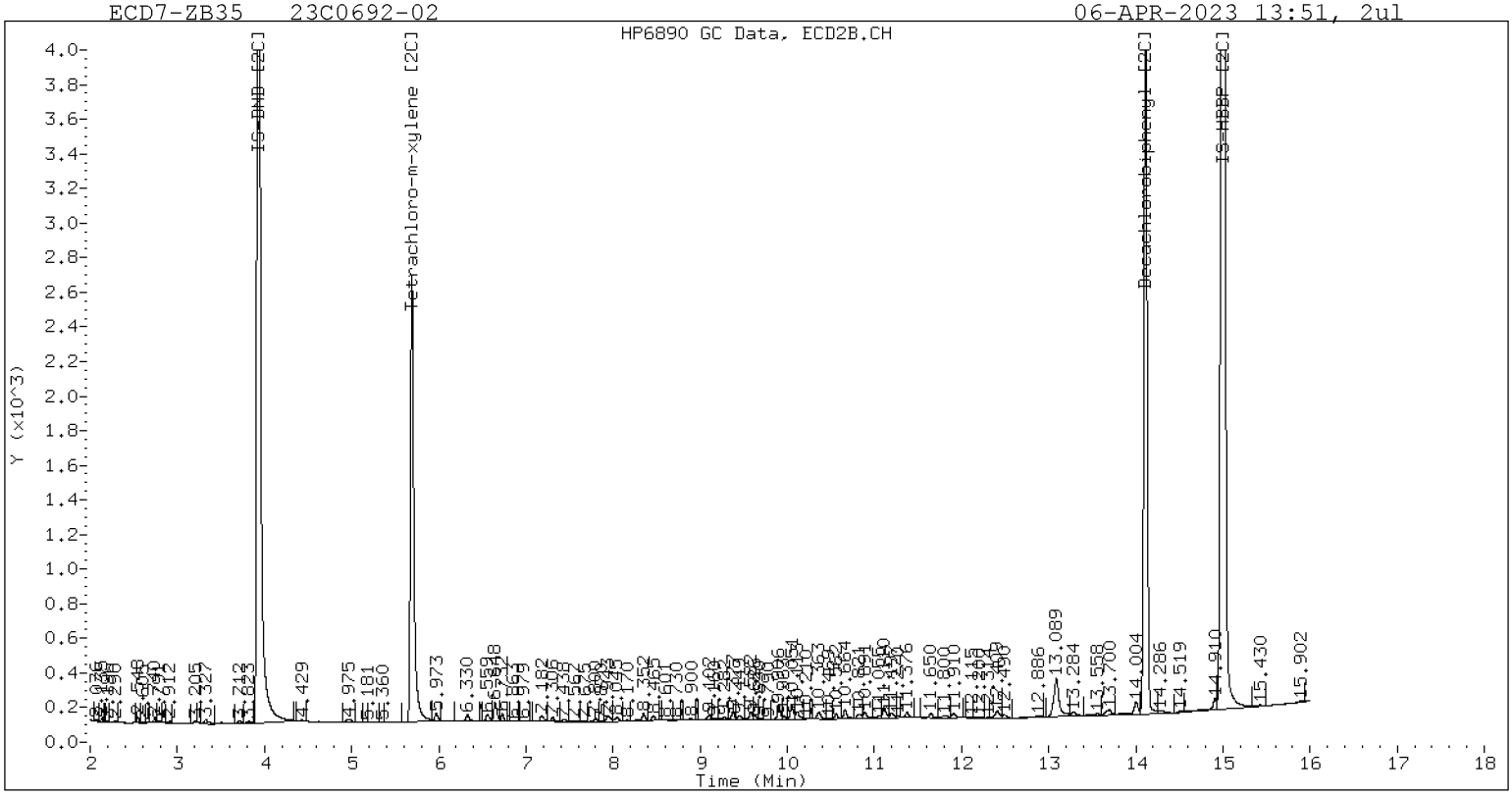
PCB Dual Column Chromatograms

ECD7-ZB5 23C0692-02 06-APR-2023 13:51, 2ul



ZB-5 Manual Integration: NO

ECD7-ZB35 23C0692-02 06-APR-2023 13:51, 2ul



ZB-35 Manual Integration: NO

Analytical Resources, LLC
Analytical Chemists and Consultants

Dual Column

SIB-SW-WR15-030923

ORGANIC ANALYSIS DATA SHEET
EPA 8082A

Laboratory:	Analytical Resources, LLC			SDG:	23C0692
Client:	HydroGeoLogic, Inc.				
Project:	Portland Harbor Superfund Site 2021-2023				
Matrix:	Water	Laboratory ID:	23C0692-03 A	File ID:	04062309ECD7.D
Sampled:	03/09/23 16:32	Prepared:	03/30/23 15:00	Analyzed:	04/06/23 14:12
% Solids:		Preparation:	EPA 3510C SepF	Initial/Final:	1000 mL / 0.5 mL
Batch:	BLC0803	Sequence:	SLD0092	Calibration:	GB00069
Instrument:	ECD7	Column 1:	ZB5	Column 2:	ZB35

CAS NO.	COMPOUND	Col #	DILUTION	CONC. (ug/L)	MDL	LOD	LOQ	Q
12674-11-2	Aroclor 1016	1	1	0.005	0.002	0.005	0.010	H, U
11104-28-2	Aroclor 1221	1	1	0.005	0.002	0.005	0.010	H, U
11141-16-5	Aroclor 1232	1	1	0.005	0.002	0.005	0.010	H, U
53469-21-9	Aroclor 1242	1	1	0.005	0.002	0.005	0.010	H, U
12672-29-6	Aroclor 1248	1	1	0.005	0.002	0.005	0.010	H, U
11097-69-1	Aroclor 1254	1	1	0.005	0.002	0.005	0.010	H, U
11096-82-5	Aroclor 1260	1	1	0.005	0.003	0.005	0.010	H, U
37324-23-5	Aroclor 1262	1	1	0.005	0.003	0.005	0.010	H, U
11100-14-4	Aroclor 1268	1	1	0.005	0.003	0.005	0.010	H, U

SURROGATES	Col #	ADDED (ug/L)	CONC (ug/L)	% REC	QC LIMITS	Q
Decachlorobiphenyl	*1*	*0.020000*	*0.0135*	*67.5*	*29 - 120*	
Tetrachlorometaxylene	*1*	*0.020000*	*0.0126*	*63.2*	*32 - 120*	

Analytical Resources Inc.
Dual Column 608/8082 PCB Quantitation Report

Data file 1: /230406.b/04062309ECD7.D
Data file 2: /230406.b/230406.b/04062309ECD7.D
Method: \\target\share\chem4\ecd7.i\230406.b\PCB.m
Compound Sublist: PCB.sub
Instrument, Inj. Vol.: ecd7.i, 2ul
Quant Method: Internal Std

ARI ID: 23C0692-03
Client ID:
Injection Date: 06-APR-2023 14:12
Report Date: 04/06/2023 14:46
Matrix: NONE
Dilution Factor: 1.0

SURROGATES

ZB5 Col			ZB35 Col			ZB5	ZB35		
RT	Shift	Response	RT	Shift	Response	on col	on col	RPD	Compound/Flag
5.808	-0.003	233386	5.692	-0.003	142558	25.3	24.3	4.1	Tetrachloro-m-xylene
13.889	-0.011	255343	14.116	-0.007	227307	27.0	26.2	2.9	Decachlorobiphenyl

* Indicates RPD > 40%

INTERNAL STANDARD SUMMARY

Column 1

Standard Cpnd	Standard Area*	Sample Area	%D
Bromo-Nitrobenzene	673778	617886	-8.3
Hexabromobiphenyl	1429847	960199	-32.8

Column 2

Standard Cpnd	Standard Area*	Sample Area	%D
Bromo-Nitrobenzene	315256	400071	26.9
Hexabromobiphenyl	513946	568934	10.7

* Standard Areas taken from Initial Cal Level 3
Initial Calibration Date: 24-FEB-2023
<- Indicates standard response outside Limits (-50 to +100%)

	ZB5 Col					ZB35 Col				
Aroclor	Peak#	RT	Shift	Area	Amount	Peak#	RT	Shift	Area	Amount
Aroclor-1016	1	---			0.0	1	---			0.0
Aroclor-1016	2	---			0.0	2	---			0.0
Aroclor-1016	3	---			0.0	3	---			0.0
Aroclor-1016	4	---			0.0	4	---			0.0
	Col1Ave: <3 Quant Peaks					Col2Ave: <3 Quant Peaks				
Aroclor-1221	1	---			0.0	1	---			0.0
Aroclor-1221	2	---			0.0	2	---			0.0
Aroclor-1221	3	---			0.0	3	---			0.0
	Col1Ave: <3 Quant Peaks					Col2Ave: <3 Quant Peaks				
Aroclor-1232	1	---			0.0	1	---			0.0
Aroclor-1232	2	---			0.0	2	---			0.0
Aroclor-1232	3	---			0.0	3	---			0.0
Aroclor-1232	4	---			0.0	4	---			0.0
	Col1Ave: <3 Quant Peaks					Col2Ave: <3 Quant Peaks				
Aroclor-1242	1	---			0.0	1	---			0.0
Aroclor-1242	2	---			0.0	2	---			0.0
Aroclor-1242	3	---			0.0	3	---			0.0
Aroclor-1242	4	---			0.0	4	---			0.0
	Col1Ave: <3 Quant Peaks					Col2Ave: <3 Quant Peaks				
Aroclor-1248	1	---			0.0	1	---			0.0
Aroclor-1248	2	---			0.0	2	---			0.0
Aroclor-1248	3	---			0.0	3	---			0.0
Aroclor-1248	4	---			0.0	4	---			0.0
	Col1Ave: <3 Quant Peaks					Col2Ave: <3 Quant Peaks				
Aroclor-1254	1	---			0.0	1	---			0.0
Aroclor-1254	2	---			0.0	2	---			0.0
Aroclor-1254	3	---			0.0	3	---			0.0
Aroclor-1254	4	---			0.0	4	---			0.0
Aroclor-1254	5	---			0.0	5	---			0.0
	Col1Ave: <3 Quant Peaks					Col2Ave: <3 Quant Peaks				
Aroclor-1260	1	---			0.0	1	---			0.0
Aroclor-1260	2	---			0.0	2	---			0.0
Aroclor-1260	3	---			0.0	3	---			0.0
Aroclor-1260	4	---			0.0	4	---			0.0
Aroclor-1260	5	---			0.0	NS	---			----
	Col1Ave: <3 Quant Peaks					Col2Ave: <3 Quant Peaks				
Aroclor-1262	1	---			0.0	1	---			0.0
Aroclor-1262	2	---			0.0	2	---			0.0
Aroclor-1262	3	---			0.0	3	---			0.0
Aroclor-1262	4	---			0.0	4	---			0.0
	Col1Ave: <3 Quant Peaks					Col2Ave: <3 Quant Peaks				
Aroclor-1268	1	---			0.0	1	---			0.0
Aroclor-1268	2	---			0.0	2	---			0.0
Aroclor-1268	3	---			0.0	3	---			0.0
Aroclor-1268	4	---			0.0	4	---			0.0
	Col1Ave: <3 Quant Peaks					Col2Ave: <3 Quant Peaks				

Total PCB Area Col1 (5.910 - 13.800) = 164455 Col1 Total PCB = 0.0 ppm*

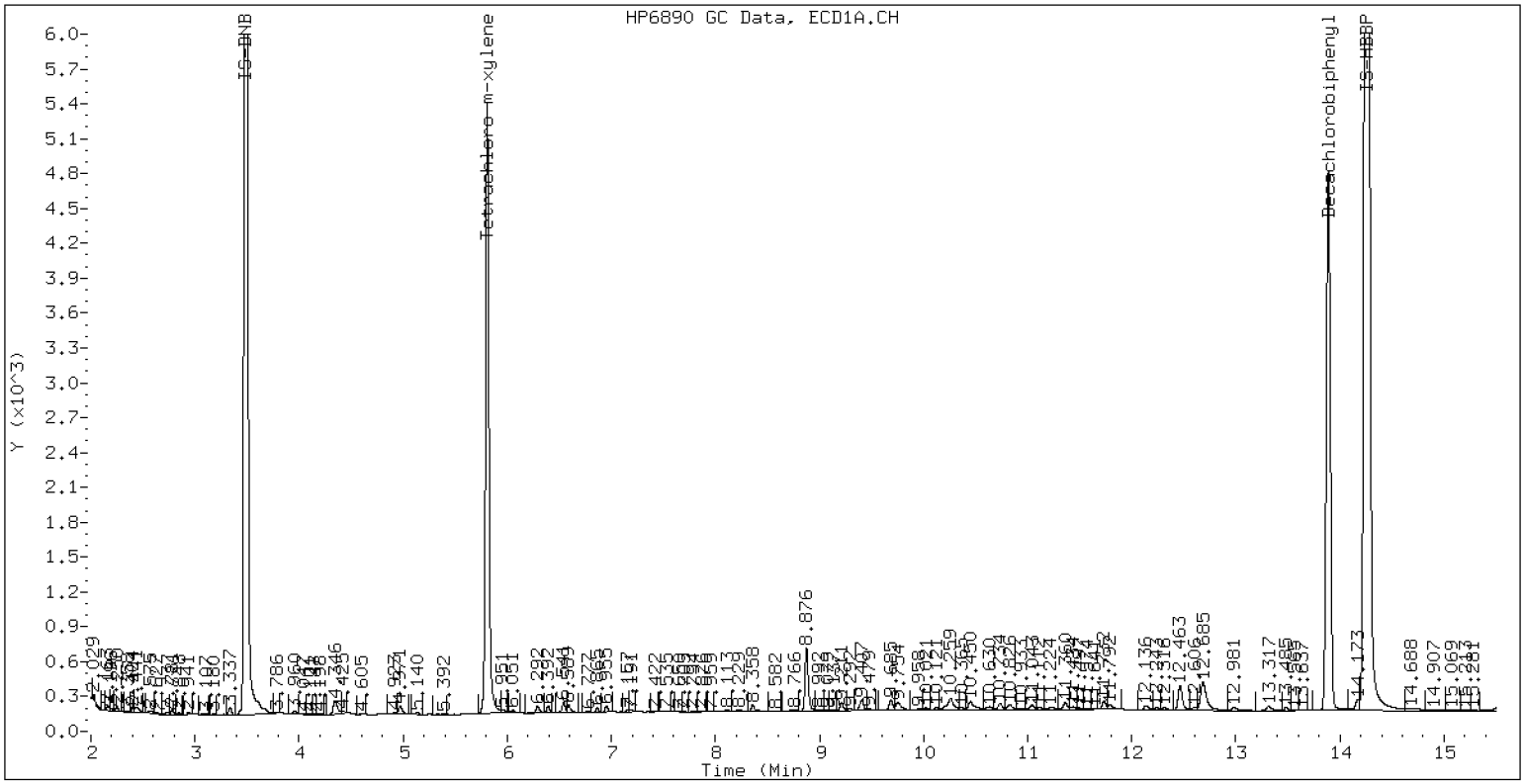
Total PCB Area Col2 (5.795 - 14.023) = 87517 Col2 Total PCB = 0.0 ppm*

* Quantitated against AR1660 0.25ppm in Ical

PCB-Form 10 Mod.

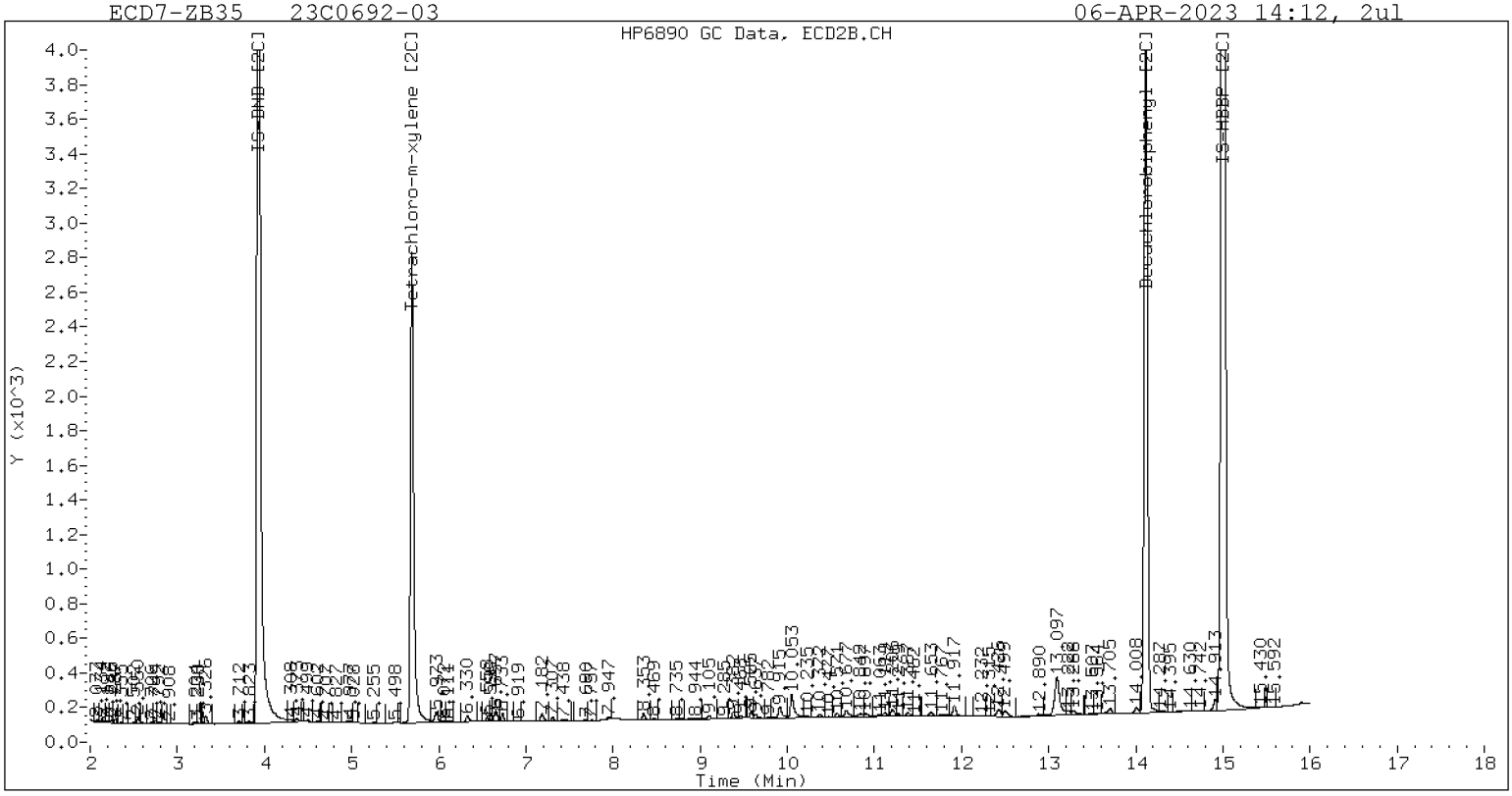
PCB Dual Column Chromatograms

ECD7-ZB5 23C0692-03 06-APR-2023 14:12, 2ul



ZB-5 Manual Integration: NO

ECD7-ZB35 23C0692-03 06-APR-2023 14:12, 2ul



ZB-35 Manual Integration: NO

Analytical Resources, LLC
Analytical Chemists and Consultants

Dual Column

SIB-SW-WR428-030923

ORGANIC ANALYSIS DATA SHEET
EPA 8082A

Laboratory:	Analytical Resources, LLC			SDG:	23C0692
Client:	HydroGeoLogic, Inc.				
Project:	Portland Harbor Superfund Site 2021-2023				
Matrix:	Water	Laboratory ID:	23C0692-04 A	File ID:	04062310ECD7.D
Sampled:	03/09/23 18:20	Prepared:	03/30/23 15:00	Analyzed:	04/06/23 14:33
% Solids:		Preparation:	EPA 3510C SepF	Initial/Final:	1000 mL / 0.5 mL
Batch:	BLC0803	Sequence:	SLD0092	Calibration:	GB00069
Instrument:	ECD7	Column 1:	ZB5	Column 2:	ZB35

CAS NO.	COMPOUND	Col #	DILUTION	CONC. (ug/L)	MDL	LOD	LOQ	Q
12674-11-2	Aroclor 1016	1	1	0.005	0.002	0.005	0.010	H, U
11104-28-2	Aroclor 1221	1	1	0.005	0.002	0.005	0.010	H, U
11141-16-5	Aroclor 1232	1	1	0.005	0.002	0.005	0.010	H, U
53469-21-9	Aroclor 1242	1	1	0.005	0.002	0.005	0.010	H, U
12672-29-6	Aroclor 1248	1	1	0.005	0.002	0.005	0.010	H, U
11097-69-1	Aroclor 1254	1	1	0.005	0.002	0.005	0.010	H, U
11096-82-5	Aroclor 1260	1	1	0.005	0.003	0.005	0.010	H, U
37324-23-5	Aroclor 1262	1	1	0.005	0.003	0.005	0.010	H, U
11100-14-4	Aroclor 1268	1	1	0.005	0.003	0.005	0.010	H, U

SURROGATES	Col #	ADDED (ug/L)	CONC (ug/L)	% REC	QC LIMITS	Q
Decachlorobiphenyl	*1*	*0.020000*	*0.0118*	*59.2*	*29 - 120*	
Tetrachlorometaxylene	*1*	*0.020000*	*0.0123*	*61.7*	*32 - 120*	

Analytical Resources Inc.
Dual Column 608/8082 PCB Quantitation Report

Data file 1: /230406.b/04062310ECD7.D
Data file 2: /230406.b/230406.b/04062310ECD7.D
Method: \\target\share\chem4\ecd7.i\230406.b\PCB.m
Compound Sublist: PCB.sub
Instrument, Inj. Vol.: ecd7.i, 2ul
Quant Method: Internal Std

ARI ID: 23C0692-04
Client ID:
Injection Date: 06-APR-2023 14:33
Report Date: 04/06/2023 14:55
Matrix: NONE
Dilution Factor: 1.0

SURROGATES

ZB5 Col RT	ZB5 Col Shift	ZB5 Col Response	ZB35 Col RT	ZB35 Col Shift	ZB35 Col Response	ZB5 on col	ZB35 on col	RPD	Compound/Flag
5.808	-0.002	239920	5.693	-0.002	138554	24.7	22.2	10.4	Tetrachloro-m-xylene
13.891	-0.009	274298	14.117	-0.006	243409	23.7	25.0	5.4	Decachlorobiphenyl

* Indicates RPD > 40%

INTERNAL STANDARD SUMMARY

Column 1

Standard Cpnd	Standard Area*	Sample Area	%D
Bromo-Nitrobenzene	673778	651525	-3.3
Hexabromobiphenyl	1429847	1176138	-17.7

Column 2

Standard Cpnd	Standard Area*	Sample Area	%D
Bromo-Nitrobenzene	315256	424743	34.7
Hexabromobiphenyl	513946	639654	24.5

* Standard Areas taken from Initial Cal Level 3
Initial Calibration Date: 24-FEB-2023
<- Indicates standard response outside Limits (-50 to +100%)

	ZB5 Col					ZB35 Col				
Aroclor	Peak#	RT	Shift	Area	Amount	Peak#	RT	Shift	Area	Amount
Aroclor-1016	1	---			0.0	1	---			0.0
Aroclor-1016	2	---			0.0	2	---			0.0
Aroclor-1016	3	---			0.0	3	---			0.0
Aroclor-1016	4	---			0.0	4	---			0.0
	Col1Ave: <3 Quant Peaks					Col2Ave: <3 Quant Peaks				
Aroclor-1221	1	---			0.0	1	---			0.0
Aroclor-1221	2	---			0.0	2	---			0.0
Aroclor-1221	3	---			0.0	3	---			0.0
	Col1Ave: <3 Quant Peaks					Col2Ave: <3 Quant Peaks				
Aroclor-1232	1	---			0.0	1	---			0.0
Aroclor-1232	2	---			0.0	2	---			0.0
Aroclor-1232	3	---			0.0	3	---			0.0
Aroclor-1232	4	---			0.0	4	---			0.0
	Col1Ave: <3 Quant Peaks					Col2Ave: <3 Quant Peaks				
Aroclor-1242	1	---			0.0	1	---			0.0
Aroclor-1242	2	---			0.0	2	---			0.0
Aroclor-1242	3	---			0.0	3	---			0.0
Aroclor-1242	4	---			0.0	4	---			0.0
	Col1Ave: <3 Quant Peaks					Col2Ave: <3 Quant Peaks				
Aroclor-1248	1	---			0.0	1	---			0.0
Aroclor-1248	2	---			0.0	2	---			0.0
Aroclor-1248	3	---			0.0	3	---			0.0
Aroclor-1248	4	---			0.0	4	---			0.0
	Col1Ave: <3 Quant Peaks					Col2Ave: <3 Quant Peaks				
Aroclor-1254	1	---			0.0	1	---			0.0
Aroclor-1254	2	---			0.0	2	---			0.0
Aroclor-1254	3	---			0.0	3	---			0.0
Aroclor-1254	4	---			0.0	4	---			0.0
Aroclor-1254	5	---			0.0	5	---			0.0
	Col1Ave: <3 Quant Peaks					Col2Ave: <3 Quant Peaks				
Aroclor-1260	1	---			0.0	1	---			0.0
Aroclor-1260	2	---			0.0	2	---			0.0
Aroclor-1260	3	---			0.0	3	---			0.0
Aroclor-1260	4	---			0.0	4	---			0.0
Aroclor-1260	5	---			0.0	NS	---			----
	Col1Ave: <3 Quant Peaks					Col2Ave: <3 Quant Peaks				
Aroclor-1262	1	---			0.0	1	---			0.0
Aroclor-1262	2	---			0.0	2	---			0.0
Aroclor-1262	3	---			0.0	3	---			0.0
Aroclor-1262	4	---			0.0	4	---			0.0
	Col1Ave: <3 Quant Peaks					Col2Ave: <3 Quant Peaks				
Aroclor-1268	1	---			0.0	1	---			0.0
Aroclor-1268	2	---			0.0	2	---			0.0
Aroclor-1268	3	---			0.0	3	---			0.0
Aroclor-1268	4	---			0.0	4	---			0.0
	Col1Ave: <3 Quant Peaks					Col2Ave: <3 Quant Peaks				

Total PCB Area Col1 (5.910 - 13.800) = 153318 Col1 Total PCB = 0.0 ppm*

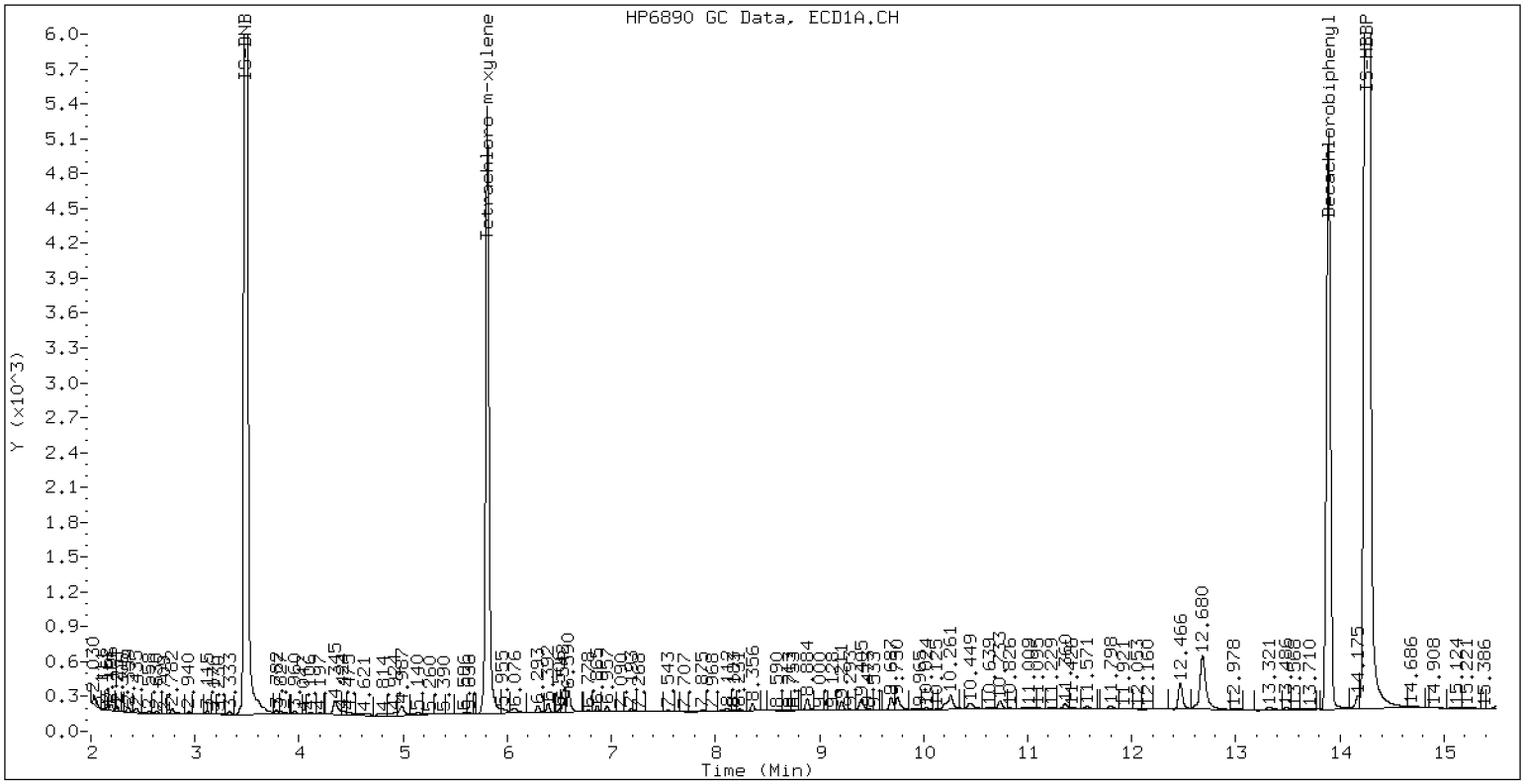
Total PCB Area Col2 (5.795 - 14.023) = 97545 Col2 Total PCB = 0.0 ppm*

* Quantitated against AR1660 0.25ppm in Ical

PCB-Form 10 Mod.

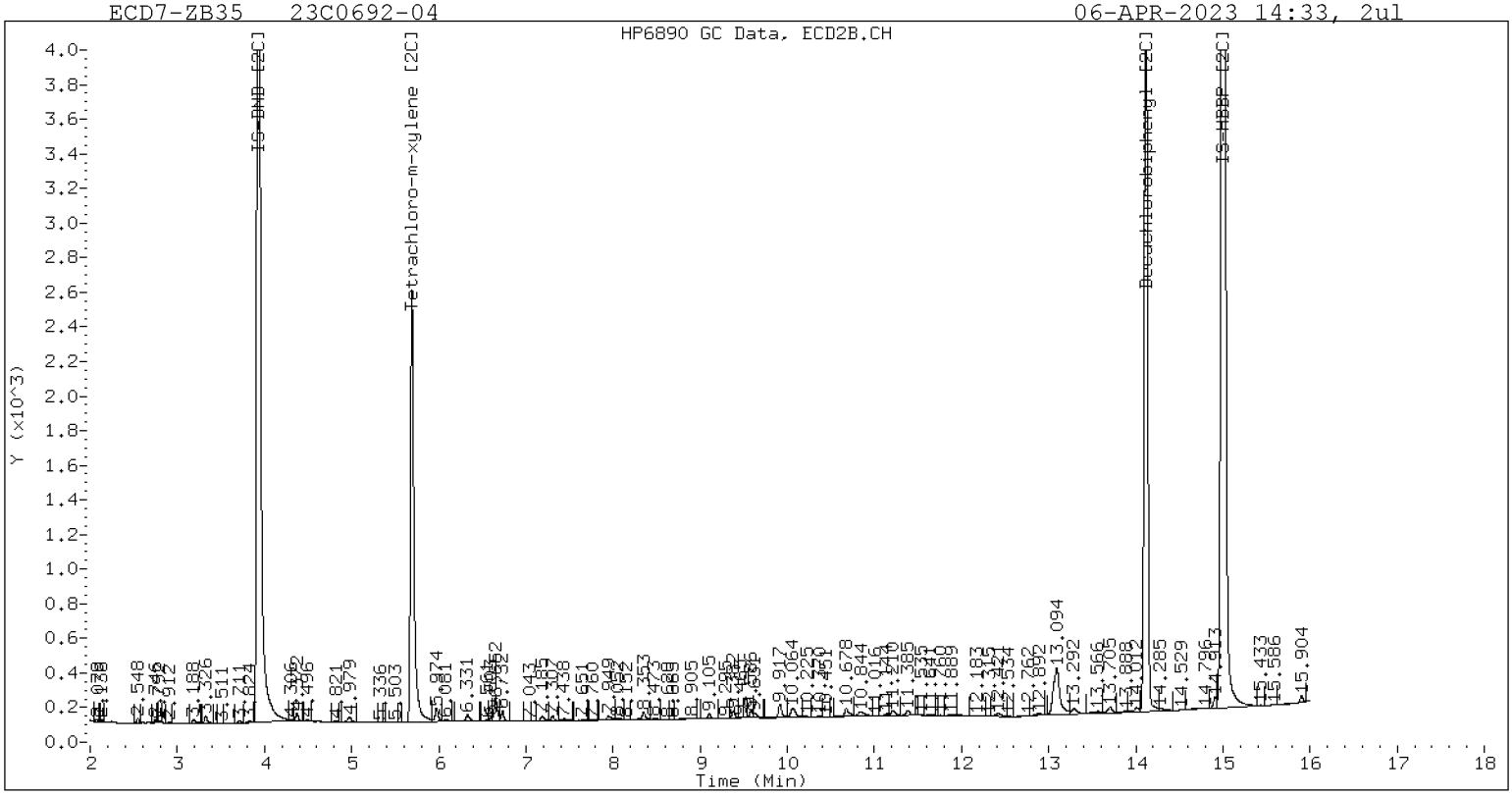
PCB Dual Column Chromatograms

ECD7-ZB5 23C0692-04 06-APR-2023 14:33, 2ul



ZB-5 Manual Integration: NO

ECD7-ZB35 23C0692-04 06-APR-2023 14:33, 2ul



ZB-35 Manual Integration: NO

Analytical Resources, LLC
Analytical Chemists and Consultants

SIB-SW-WR71-030923

Dual Column

ORGANIC ANALYSIS DATA SHEET
EPA 8082A

Laboratory:	Analytical Resources, LLC			SDG:	23C0692
Client:	HydroGeoLogic, Inc.				
Project:	Portland Harbor Superfund Site 2021-2023				
Matrix:	Water	Laboratory ID:	23C0692-05 A	File ID:	04062312ECD7.D
Sampled:	03/09/23 17:50	Prepared:	03/30/23 15:00	Analyzed:	04/06/23 15:14
% Solids:		Preparation:	EPA 3510C SepF	Initial/Final:	1000 mL / 0.5 mL
Batch:	BLC0803	Sequence:	SLD0092	Calibration:	GB00069
Instrument:	ECD7	Column 1:	ZB5	Column 2:	ZB35

CAS NO.	COMPOUND	Col #	DILUTION	CONC. (ug/L)	MDL	LOD	LOQ	Q
12674-11-2	Aroclor 1016	1	1	0.005	0.002	0.005	0.010	H, U
11104-28-2	Aroclor 1221	1	1	0.005	0.002	0.005	0.010	H, U
11141-16-5	Aroclor 1232	1	1	0.005	0.002	0.005	0.010	H, U
53469-21-9	Aroclor 1242	1	1	0.005	0.002	0.005	0.010	H, U
12672-29-6	Aroclor 1248	1	1	0.005	0.002	0.005	0.010	H, U
11097-69-1	Aroclor 1254	1	1	0.005	0.002	0.005	0.010	H, U
11096-82-5	Aroclor 1260	1	1	0.005	0.003	0.005	0.010	H, U
37324-23-5	Aroclor 1262	1	1	0.005	0.003	0.005	0.010	H, U
11100-14-4	Aroclor 1268	1	1	0.005	0.003	0.005	0.010	H, U

SURROGATES	Col #	ADDED (ug/L)	CONC (ug/L)	% REC	QC LIMITS	Q
Decachlorobiphenyl	*1*	*0.020000*	*0.0134*	*67.0*	*29 - 120*	
Tetrachlorometaxylene	*1*	*0.020000*	*0.0136*	*67.9*	*32 - 120*	

Analytical Resources Inc.
Dual Column 608/8082 PCB Quantitation Report

Data file 1: /230406.b/04062312ECD7.D
Data file 2: /230406.b/230406.b/04062312ECD7.D
Method: \\target\share\chem4\ecd7.i\230406.b\PCB.m
Compound Sublist: PCB.sub
Instrument, Inj. Vol.: ecd7.i, 2ul
Quant Method: Internal Std

ARI ID: 23C0692-05
Client ID:
Injection Date: 06-APR-2023 15:14
Report Date: 04/06/2023 16:02
Matrix: NONE
Dilution Factor: 1.0

SURROGATES

ZB5 Col RT	ZB5 Col Shift	ZB5 Col Response	ZB35 Col RT	ZB35 Col Shift	ZB35 Col Response	ZB5 on col	ZB35 on col	RPD	Compound/Flag
5.807	-0.003	263836	5.692	-0.003	146519	27.2	24.5	10.3	Tetrachloro-m-xylene
13.891	-0.009	350840	14.117	-0.006	283968	26.8	27.3	1.9	Decachlorobiphenyl

* Indicates RPD > 40%

INTERNAL STANDARD SUMMARY

Column 1

Standard Cpnd	Standard Area*	Sample Area	%D
Bromo-Nitrobenzene	673778	650381	-3.5
Hexabromobiphenyl	1429847	1328486	-7.1

Column 2

Standard Cpnd	Standard Area*	Sample Area	%D
Bromo-Nitrobenzene	315256	407514	29.3
Hexabromobiphenyl	513946	682528	32.8

* Standard Areas taken from Initial Cal Level 3
Initial Calibration Date: 24-FEB-2023
<- Indicates standard response outside Limits (-50 to +100%)

	ZB5 Col					ZB35 Col				
Aroclor	Peak#	RT	Shift	Area	Amount	Peak#	RT	Shift	Area	Amount
Aroclor-1016	1	---			0.0	1	---			0.0
Aroclor-1016	2	---			0.0	2	---			0.0
Aroclor-1016	3	---			0.0	3	---			0.0
Aroclor-1016	4	---			0.0	4	---			0.0
	Col1Ave: <3 Quant Peaks					Col2Ave: <3 Quant Peaks				
Aroclor-1221	1	---			0.0	1	---			0.0
Aroclor-1221	2	---			0.0	2	---			0.0
Aroclor-1221	3	---			0.0	3	---			0.0
	Col1Ave: <3 Quant Peaks					Col2Ave: <3 Quant Peaks				
Aroclor-1232	1	---			0.0	1	---			0.0
Aroclor-1232	2	---			0.0	2	---			0.0
Aroclor-1232	3	---			0.0	3	---			0.0
Aroclor-1232	4	---			0.0	4	---			0.0
	Col1Ave: <3 Quant Peaks					Col2Ave: <3 Quant Peaks				
Aroclor-1242	1	---			0.0	1	---			0.0
Aroclor-1242	2	---			0.0	2	---			0.0
Aroclor-1242	3	---			0.0	3	---			0.0
Aroclor-1242	4	---			0.0	4	---			0.0
	Col1Ave: <3 Quant Peaks					Col2Ave: <3 Quant Peaks				
Aroclor-1248	1	---			0.0	1	---			0.0
Aroclor-1248	2	---			0.0	2	---			0.0
Aroclor-1248	3	---			0.0	3	---			0.0
Aroclor-1248	4	---			0.0	4	---			0.0
	Col1Ave: <3 Quant Peaks					Col2Ave: <3 Quant Peaks				
Aroclor-1254	1	---			0.0	1	---			0.0
Aroclor-1254	2	---			0.0	2	---			0.0
Aroclor-1254	3	---			0.0	3	---			0.0
Aroclor-1254	4	---			0.0	4	---			0.0
Aroclor-1254	5	---			0.0	5	---			0.0
	Col1Ave: <3 Quant Peaks					Col2Ave: <3 Quant Peaks				
Aroclor-1260	1	---			0.0	1	---			0.0
Aroclor-1260	2	---			0.0	2	---			0.0
Aroclor-1260	3	---			0.0	3	---			0.0
Aroclor-1260	4	---			0.0	4	---			0.0
Aroclor-1260	5	---			0.0	NS	---			----
	Col1Ave: <3 Quant Peaks					Col2Ave: <3 Quant Peaks				
Aroclor-1262	1	---			0.0	1	---			0.0
Aroclor-1262	2	---			0.0	2	---			0.0
Aroclor-1262	3	---			0.0	3	---			0.0
Aroclor-1262	4	---			0.0	4	---			0.0
	Col1Ave: <3 Quant Peaks					Col2Ave: <3 Quant Peaks				
Aroclor-1268	1	---			0.0	1	---			0.0
Aroclor-1268	2	---			0.0	2	---			0.0
Aroclor-1268	3	---			0.0	3	---			0.0
Aroclor-1268	4	---			0.0	4	---			0.0
	Col1Ave: <3 Quant Peaks					Col2Ave: <3 Quant Peaks				

Total PCB Area Col1 (5.910 - 13.800) = 325856 Col1 Total PCB = 0.0 ppm*

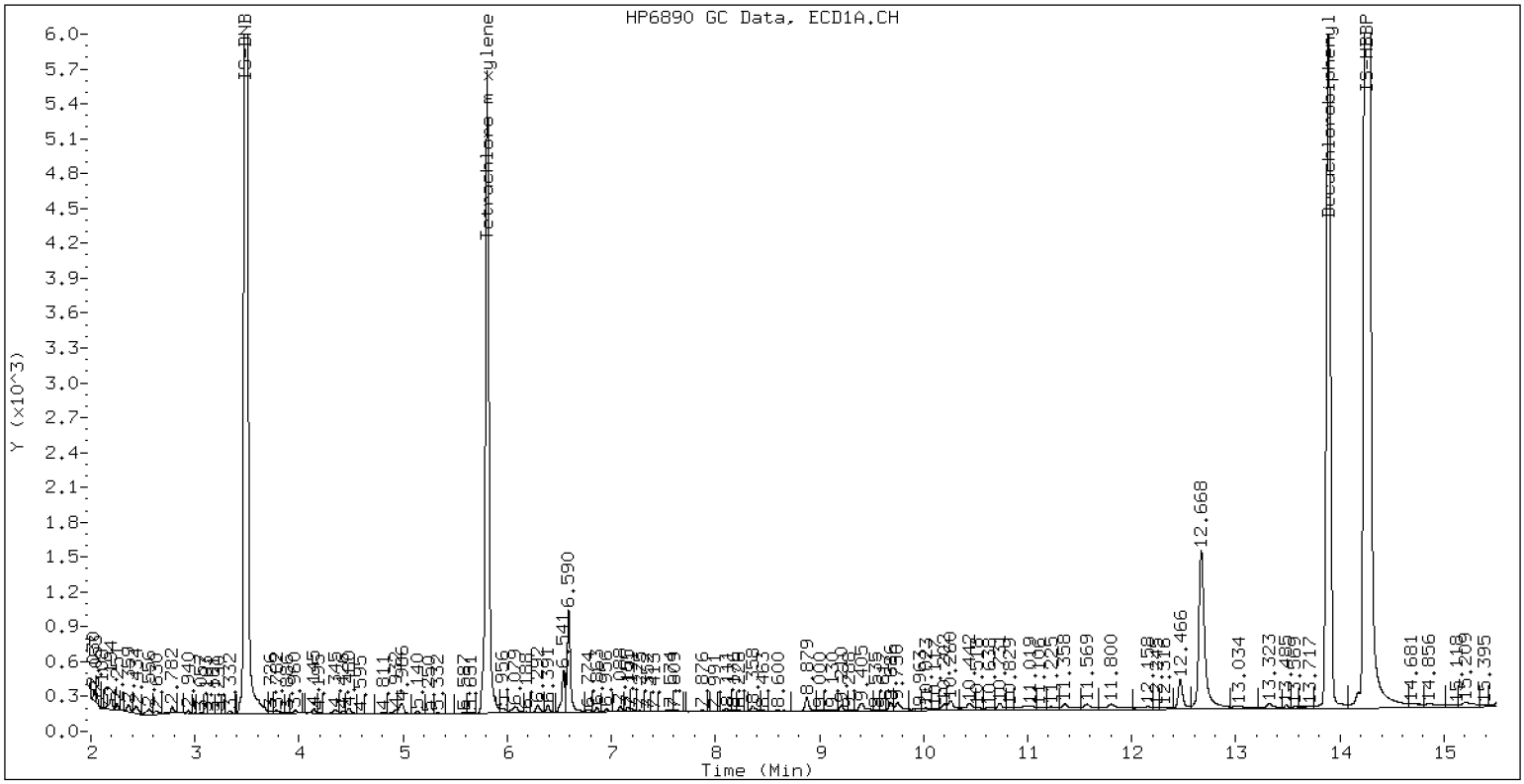
Total PCB Area Col2 (5.795 - 14.023) = 173299 Col2 Total PCB = 0.0 ppm*

* Quantitated against AR1660 0.25ppm in Ical

PCB-Form 10 Mod.

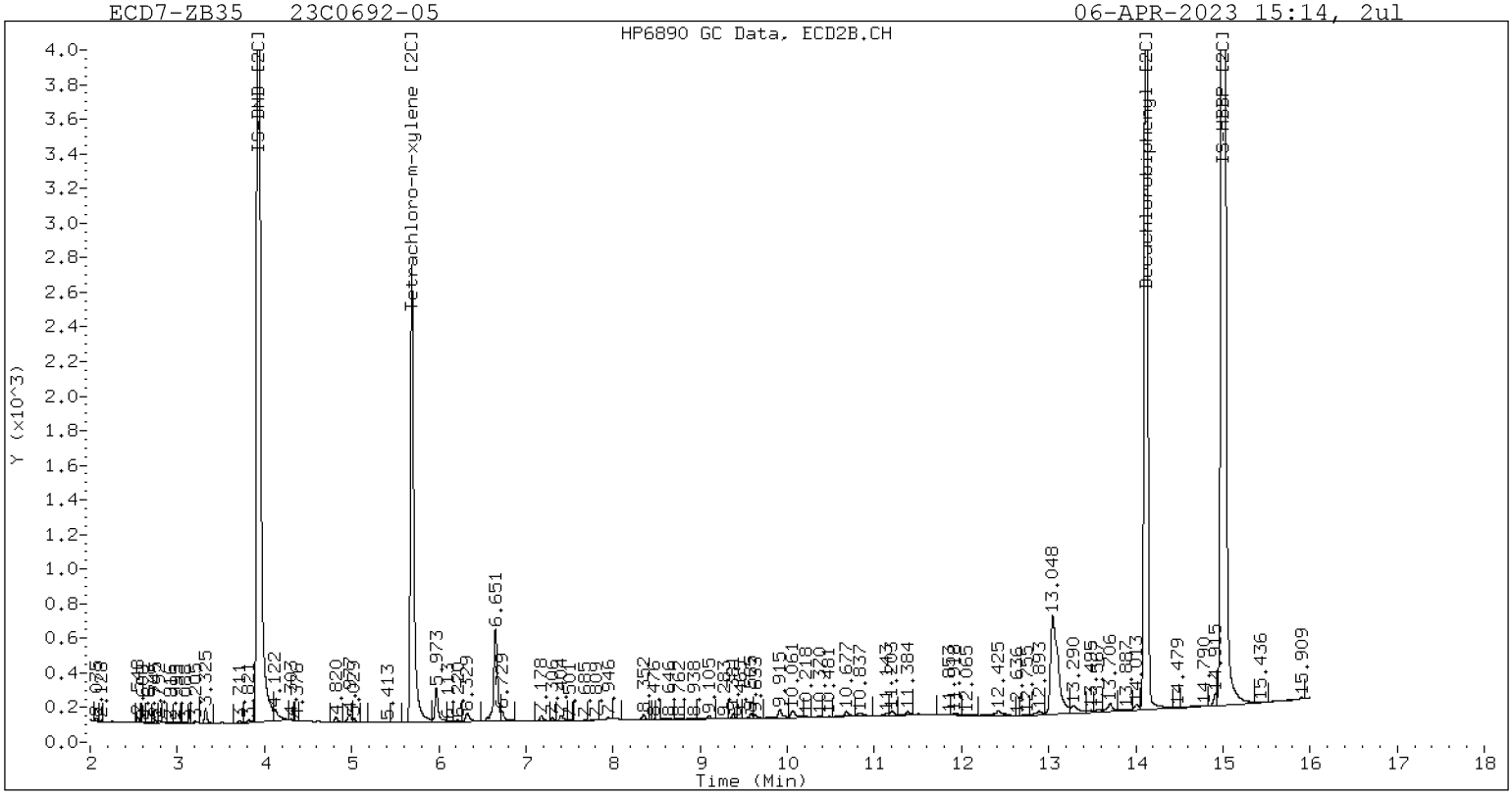
PCB Dual Column Chromatograms

ECD7-ZB5 23C0692-05 06-APR-2023 15:14, 2ul



ZB-5 Manual Integration: NO

ECD7-ZB35 23C0692-05 06-APR-2023 15:14, 2ul



ZB-35 Manual Integration: NO

Analytical Resources, LLC
Analytical Chemists and Consultants

SIB-SW-WR30-030923

Dual Column

ORGANIC ANALYSIS DATA SHEET
EPA 8082A

Laboratory:	Analytical Resources, LLC			SDG:	23C0692
Client:	HydroGeoLogic, Inc.				
Project:	Portland Harbor Superfund Site 2021-2023				
Matrix:	Water	Laboratory ID:	23C0692-06 A	File ID:	04062313ECD7.D
Sampled:	03/09/23 16:53	Prepared:	03/30/23 15:00	Analyzed:	04/06/23 15:35
% Solids:		Preparation:	EPA 3510C SepF	Initial/Final:	1000 mL / 0.5 mL
Batch:	BLC0803	Sequence:	SLD0092	Calibration:	GB00069
Instrument:	ECD7	Column 1:	ZB5	Column 2:	ZB35

CAS NO.	COMPOUND	Col #	DILUTION	CONC. (ug/L)	MDL	LOD	LOQ	Q
12674-11-2	Aroclor 1016	1	1	0.005	0.002	0.005	0.010	H, U
11104-28-2	Aroclor 1221	1	1	0.005	0.002	0.005	0.010	H, U
11141-16-5	Aroclor 1232	1	1	0.005	0.002	0.005	0.010	H, U
53469-21-9	Aroclor 1242	1	1	0.005	0.002	0.005	0.010	H, U
12672-29-6	Aroclor 1248	1	1	0.005	0.002	0.005	0.010	H, U
11097-69-1	Aroclor 1254	1	1	0.005	0.002	0.005	0.010	H, U
11096-82-5	Aroclor 1260	1	1	0.005	0.003	0.005	0.010	H, U
37324-23-5	Aroclor 1262	1	1	0.005	0.003	0.005	0.010	H, U
11100-14-4	Aroclor 1268	1	1	0.005	0.003	0.005	0.010	H, U

SURROGATES	Col #	ADDED (ug/L)	CONC (ug/L)	% REC	QC LIMITS	Q
Decachlorobiphenyl	*1*	*0.020000*	*0.0117*	*58.6*	*29 - 120*	
Tetrachlorometaxylene	*1*	*0.020000*	*0.0119*	*59.4*	*32 - 120*	

Analytical Resources Inc.
Dual Column 608/8082 PCB Quantitation Report

Data file 1: /230406.b/04062313ECD7.D
Data file 2: /230406.b/230406.b/04062313ECD7.D
Method: \\target\share\chem4\ecd7.i\230406.b\PCB.m
Compound Sublist: PCB.sub
Instrument, Inj. Vol.: ecd7.i, 2ul
Quant Method: Internal Std

ARI ID: 23C0692-06
Client ID:
Injection Date: 06-APR-2023 15:35
Report Date: 04/06/2023 16:02
Matrix: NONE
Dilution Factor: 1.0

SURROGATES

ZB5 Col			ZB35 Col			ZB5	ZB35		
RT	Shift	Response	RT	Shift	Response	on col	on col	RPD	Compound/Flag
5.807	-0.003	215972	5.691	-0.004	125678	23.8	22.4	6.0	Tetrachloro-m-xylene
13.884	-0.015	107115	14.110	-0.013	118958	23.4	21.6	7.9	Decachlorobiphenyl

* Indicates RPD > 40%

INTERNAL STANDARD SUMMARY

Column 1

Standard Cpnd	Standard Area*	Sample Area	%D
Bromo-Nitrobenzene	673778	608934	-9.6
Hexabromobiphenyl	1429847	464263	-67.5 <-

Column 2

Standard Cpnd	Standard Area*	Sample Area	%D
Bromo-Nitrobenzene	315256	383092	21.5
Hexabromobiphenyl	513946	360827	-29.8

* Standard Areas taken from Initial Cal Level 3
Initial Calibration Date: 24-FEB-2023
<- Indicates standard response outside Limits (-50 to +100%)

Aroclor	Peak#	ZB5 Col RT	Shift	Area	Amount	Peak#	ZB35 Col RT	Shift	Area	Amount
Aroclor-1016	1	---			0.0	1	---			0.0
Aroclor-1016	2	---			0.0	2	---			0.0
Aroclor-1016	3	---			0.0	3	---			0.0
Aroclor-1016	4	---			0.0	4	---			0.0
	Col1Ave: <3 Quant Peaks					Col2Ave: <3 Quant Peaks				
Aroclor-1221	1	---			0.0	1	---			0.0
Aroclor-1221	2	---			0.0	2	---			0.0
Aroclor-1221	3	---			0.0	3	---			0.0
	Col1Ave: <3 Quant Peaks					Col2Ave: <3 Quant Peaks				
Aroclor-1232	1	---			0.0	1	---			0.0
Aroclor-1232	2	---			0.0	2	---			0.0
Aroclor-1232	3	---			0.0	3	---			0.0
Aroclor-1232	4	---			0.0	4	---			0.0
	Col1Ave: <3 Quant Peaks					Col2Ave: <3 Quant Peaks				
Aroclor-1242	1	---			0.0	1	---			0.0
Aroclor-1242	2	---			0.0	2	---			0.0
Aroclor-1242	3	---			0.0	3	---			0.0
Aroclor-1242	4	---			0.0	4	---			0.0
	Col1Ave: <3 Quant Peaks					Col2Ave: <3 Quant Peaks				
Aroclor-1248	1	---			0.0	1	---			0.0
Aroclor-1248	2	---			0.0	2	---			0.0
Aroclor-1248	3	---			0.0	3	---			0.0
Aroclor-1248	4	---			0.0	4	---			0.0
	Col1Ave: <3 Quant Peaks					Col2Ave: <3 Quant Peaks				
Aroclor-1254	1	---			0.0	1	---			0.0
Aroclor-1254	2	---			0.0	2	---			0.0
Aroclor-1254	3	---			0.0	3	---			0.0
Aroclor-1254	4	---			0.0	4	---			0.0
Aroclor-1254	5	---			0.0	5	---			0.0
	Col1Ave: <3 Quant Peaks					Col2Ave: <3 Quant Peaks				
Aroclor-1260	1	---			0.0	1	---			0.0
Aroclor-1260	2	---			0.0	2	---			0.0
Aroclor-1260	3	---			0.0	3	---			0.0
Aroclor-1260	4	---			0.0	4	---			0.0
Aroclor-1260	5	---			0.0	NS	---			----
	Col1Ave: <3 Quant Peaks					Col2Ave: <3 Quant Peaks				
Aroclor-1262	1	---			0.0	1	---			0.0
Aroclor-1262	2	---			0.0	2	---			0.0
Aroclor-1262	3	---			0.0	3	---			0.0
Aroclor-1262	4	---			0.0	4	---			0.0
	Col1Ave: <3 Quant Peaks					Col2Ave: <3 Quant Peaks				
Aroclor-1268	1	---			0.0	1	---			0.0
Aroclor-1268	2	---			0.0	2	---			0.0
Aroclor-1268	3	---			0.0	3	---			0.0
Aroclor-1268	4	---			0.0	4	---			0.0
	Col1Ave: <3 Quant Peaks					Col2Ave: <3 Quant Peaks				

Total PCB Area Col1 (5.910 - 13.800) = 523295 Col1 Total PCB = 0.1 ppm*

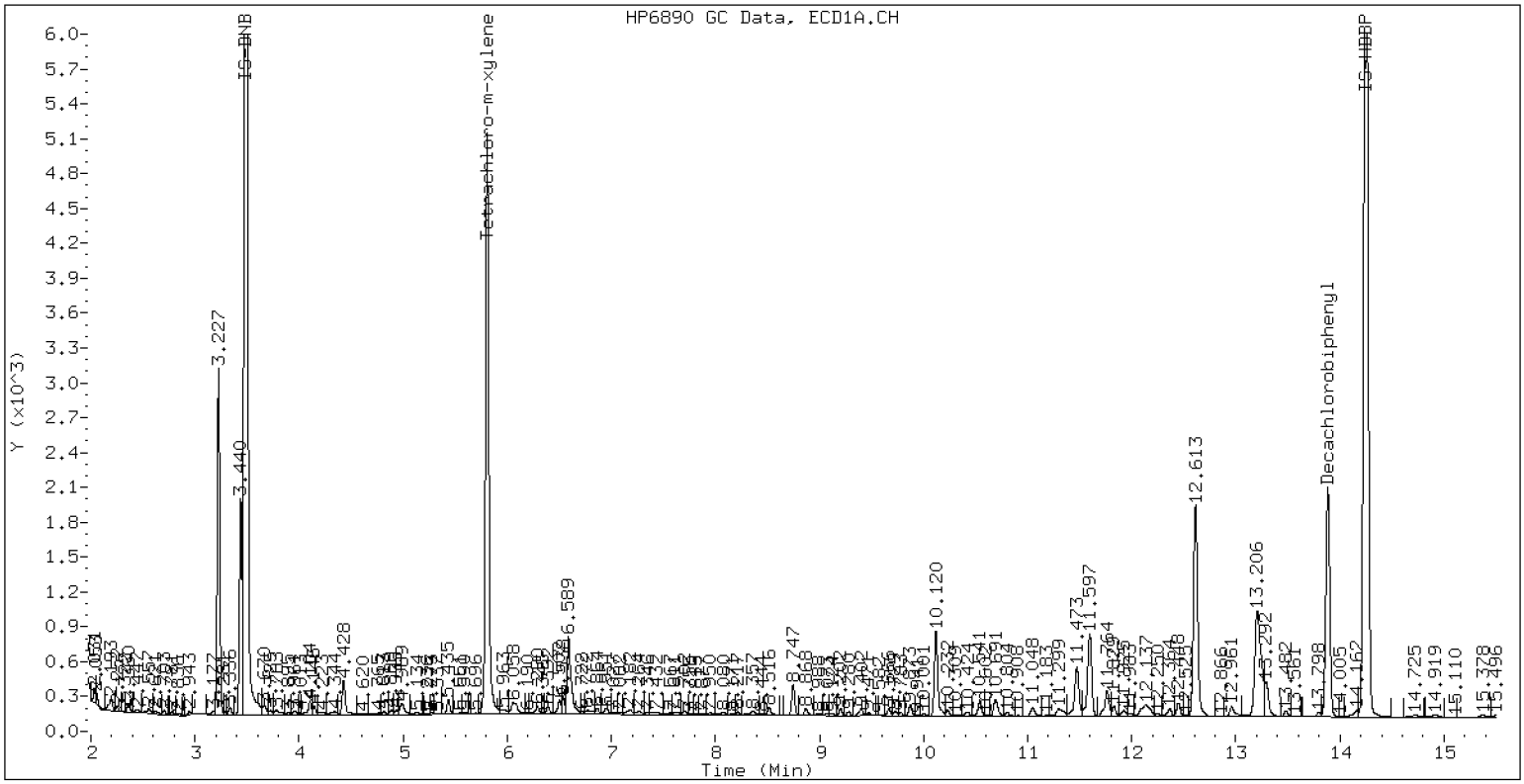
Total PCB Area Col2 (5.795 - 14.023) = 346191 Col2 Total PCB = 0.1 ppm*

* Quantitated against AR1660 0.25ppm in Ical

PCB-Form 10 Mod.

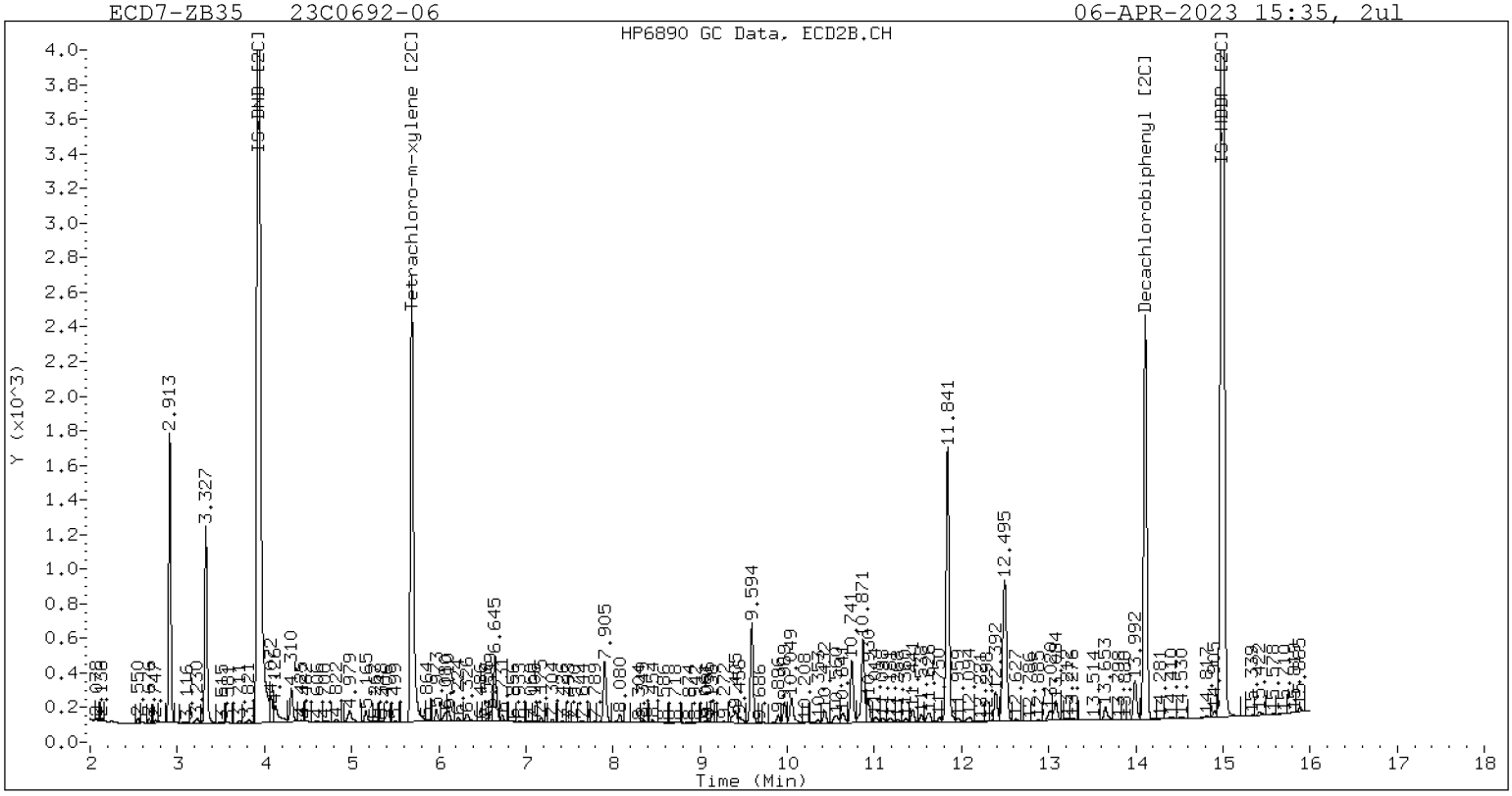
PCB Dual Column Chromatograms

ECD7-ZB5 23C0692-06 06-APR-2023 15:35, 2ul



ZB-5 Manual Integration: NO

ECD7-ZB35 23C0692-06 06-APR-2023 15:35, 2ul



ZB-35 Manual Integration: NO

Analytical Resources, LLC
Analytical Chemists and Consultants

PREPARATION BATCH SUMMARY

EPA 8082A

Laboratory: Analytical Resources, LLC
SDG: 23C0692
Client: HydroGeoLogic, Inc.
Project: Portland Harbor Superfund Site 2021-2023
Batch: BLC0803 Batch Matrix: Water
Preparation: EPA 3510C SepF

SAMPLE NAME	LAB SAMPLE ID	LAB FILE ID	DATE PREPARED	OBSERVATIONS
SIB-SW-WR198-030923	23C0692-01	04062307ECD7.D	03/30/23 15:00	
SIB-SW-WR186-030923	23C0692-02	04062308ECD7.D	03/30/23 15:00	
SIB-SW-WR15-030923	23C0692-03	04062309ECD7.D	03/30/23 15:00	
SIB-SW-WR428-030923	23C0692-04	04062310ECD7.D	03/30/23 15:00	
SIB-SW-WR71-030923	23C0692-05	04062312ECD7.D	03/30/23 15:00	
SIB-SW-WR30-030923	23C0692-06	04062313ECD7.D	03/30/23 15:00	
Blank	BLC0803-BLK1	04062304ECD7.D	03/31/23 09:04	
LCS	BLC0803-BS1	04062305ECD7.D	03/31/23 09:04	
LCS Dup	BLC0803-BSD1	04062306ECD7.D	03/31/23 09:04	

Analytical Resources, LLC
Analytical Chemists and Consultants

ORGANICS PREPARATION BENCH SHEET

Batch: BLC0803

Prepared using: EPA 3510C SepF
8082A PCB Water 0.01 in Water

Matrix: Water **Date Prepared:** 3/30/23 **Balance ID:** N/A **Set Up By:** CRO 3/30/23

WO Comments
23C0692: Includes Level 4 package and EQUIS EDD. <E> LCS/LCSD, MS/MSD </E> <M> MS/MSD (BPR, CRM per batch, Serial dilutions and Post spikes REQUIRED for failing QC for Hg and metals</M>

Analysis: 8082A PCB Water 0.01

Lab Number & Container	Initial (mL) (Target) Actual	(REQ) Acid C/U (1:1)	(REQ) Sulfur C/U (1:1) Transfer Rinse	(REQ) Silica Gel C/U (1:1) Transfer Rinse	Final Effective Vol (mL)	Vol (mL) to Lab	Extraction Comments
23C0692-01 A	(1,000.00) 1000	4mL	4mL	1mL	0.5 ____	0.5 ____	
23C0692-02 A	(1,000.00) ____	4mL	4mL	1mL	0.5 ____	0.5 ____	
23C0692-03 A	(1,000.00) ____	4mL	4mL	1mL	0.5 ____	0.5 ____	
23C0692-04 A	(1,000.00) ____	4mL	4mL	1mL	0.5 ____	0.5 ____	
23C0692-05 A	(1,000.00) ____	4mL	4mL	1mL	0.5 ____	0.5 ____	
23C0692-06 A	(1,000.00) ____	4mL	4mL	1mL	0.5 ____	0.5 ____	

Batch QC

Lab Number	Initial (mL) (Target) Actual	(REQ) Acid C/U (1:1)	(REQ) Sulfur C/U (1:1) Transfer Rinse	(REQ) Silica Gel C/U (1:1) Transfer Rinse	Final Effective Vol (mL)	Vol (mL) to Lab	Extraction Comments
BLC0803-BLK1	(1,000.00) 1000	4mL	4mL	1mL	0.5 ____	0.5 ____	
BLC0803-BS1	(1,000.00) ____	4mL	4mL	1mL	0.5 ____	0.5 ____	
BLC0803-BSD1	(1,000.00) ____	4mL	4mL	1mL	0.5 ____	0.5 ____	

Client ID verified By	Date	Preparation Reviewed By	Date	Extraction Date and Time
[illegible]	3/30/23	CJ	4/6/23	03/31/23 15:00

Analytical Resources, LLC
Analytical Chemists and Consultants

ORGANICS PREPARATION BENCH SHEET

Batch: BLC0803

Prepared using: EPA 3510C SepF

8082A PCB Water 0.01 in Water

WO Comments
23C0692: Includes Level 4 package and EQUIS EDD. <E> LCS/LCSD, MS/MSD </E> <M> MS/MSD (BPR, CRM per batch, Serial dilutions and Post spikes REQUIRED for failing QC for Hg and metals</M>

Prep Steps

Verify pH is 5-9	Y N D SH 3/30/23 Analyst/Date
KD 100°C	1 2 3 4 5 6 D CR 3/31/23 Analyst/Date
TurboVap Pre Cleanups	1 2 3 4 5 LJ 4/5/23 Analyst/Date
TurboVap Post Cleanups	1 2 3 4 5 LJ 4/6/23 Analyst/Date
Vialing	LJ 4/6/23 Analyst/Date

Reagents Used

Station/Reagent	Standard ID
pH Adjustment Analyst: SH Date: 3/30/23	
pH Paper	L001488
Separatory Funnel Analyst: SH Date: 3/30/23	
Anhydrous Sodium Sulfate	L002971
Hexane	L001957
KD Analyst: CR Date: 3/31/23	
Hexane	L001957
Vialing Analyst: LJ Date: 4/6/23	
Hexane	L001957
Concentrated Sulfuric Acid	L001053
Tetrabutylammonium hydrogensulfate (TBAS)	L002438
Sodium Sulfite	L002437
Silica Gel (SPE) Darts	L003130

Surrogates & Spike Standards Used

Type	Vial ID / Standard ID	Vol uL	Analyst	Witness
Surrogate 0.2µg/mL	D L000774 Exp Date:	100µL		SH
Spike/LCS Only NOT for MDL 0.2µg/mL	QLS 23 L001589 Exp Date:	250µL		SH
~~QLS Spike~~ 0.2µg/mL	~~QLS 23 L001589~~ Exp Date:	~~50µL~~		

MANUALLY ENTER EXPIRATION DATES!

(V) indicates a virtual standard combining two or more physical standards. In these cases the Standard ID refers to the virtual standard, not the parent standards.

If a Standard ID is missing, but should be present, check the standard definition in Element LIMS to be sure Standard Info 6 has the correct letter or number designator matching the vial designator inthe Standard ID column. If it is correct, check the batch and bench sheet in Element LIMS to be sure the correct standards are selected for surrogate(s) and spike(s).

Analytical Resources, LLC
Analytical Chemists and Consultants

ORGANICS PREPARATION BENCH SHEET

Batch: BLC0803

Prepared using: EPA 3510C SepF

8082A PCB Water 0.01 in Water

WO Comments

23C0692: Includes Level 4 package and EQUIS EDD. <E> LCS/LCSD, MS/MSD </E> <M> MS/MSD (BPR, CRM per batch, Serial dilutions and Post spikes REQUIRED for failing QC for Hg and metals</M>

Prep Instructions	
SPECIAL INSTRUCTIONS: 1. Rinse all Non-scratched glassware with HEXANE ONLY! (NO DCM!) 2. Verify pH is 5-9. 3. Adjust pH (if necessary=Analyst Notes). 4. Add Surr/Spike. 5. Add 60 mL Hexane to 1.0L sample bottle and perform a bottle rinse. 6. Extract 3X with 60mL Hexane. 7. Non-scratched KD (NO Drying Column) at 100°. RINSE SNYDER COLUMNS WITH HEXANE ONLY! 8. TurboVap. 9. Clean-ups=Transfer Rinse. 10. TurboVap. 11. Vial with Hexane. 12. Rinse syringe 3X w/ DCM followed by 3X w/ Hexane. Archive: Y / N	

Analytical Resources, Incorporated
Analytical Chemists and Consultants

Organic Extractions Laboratory Analyst Notes

Extraction Parameter: LL PCB Extraction Batch BL0692

Total Solids Batch: NA Work Order(s): 2308692

Screens: Soil/Sediment/Solid/Other:	Analyst/Date
☐ No Anomalies (standard soil/wet sediment/sand/gravel)=	
☐ Standing Water Decanted (Not shared)=	
☐ Standing Water Homogenized (Shared samples)=	
☐ Clay/Clumps (Difficult to homogenize)=	
☐ Rocks (%+size)?	
☐ Organics (Leaves/sticks/grass)=	
☐ Oily, obvious fuel/sulfur odors=	
☐ Received in 32oz jar(s)=Homogenized in Pyrex dish=	
☐ Previously Frozen =	
☐ Other (Details)=	
Aqueous:	
☐ No Anomalies	
☒ Turbid/Color= All faint yellow turbid	SJT 3/30/23
☐ Particulates(%)=(Note: >5%=Notify Supervisor/Lead)	
☐ Emulsions (%)=	
☐ Oily, obvious fuel/sulfur odors=	
☐ Other (Details)=	
☐ Received in 1.0L Bottle(s)=No Bottle Rinse=	
☒ Other Notes/Comments= (Note problems, concerns, corrective actions).	
Samples received out of hold	GTD 3/30/23
☐ Share Samples Y / N	
☐ Multiple Jars Y / N	
☐ Sample Pre-Screens indicate analyte activity=	
☐ Sample weights/volumes reduced based on Pre-Screen=	

Analytical Resources, LLC
Analytical Chemists and Consultants

CLEANUP BATCH SUMMARY

Laboratory:	Analytical Resources, LLC	SDG:	23C0692
Client:	HydroGeoLogic, Inc.	Project:	Portland Harbor Superfund Site 2021-20
Cleanup Batch:	CLD0037	Cleanup Type:	Silica Gel
Cleanup Method:	EPA 3630C Silica Gel Cleanup - uL	Analysis:	EPA 8082A

SAMPLE NAME	LAB SAMPLE ID	LAB FILE ID	DATE PREPARED	OBSERVATIONS
SIB-SW-WR428-030923	23C0692-04	04062310ECD7.D	04/06/2023	
SIB-SW-WR186-030923	23C0692-02	04062308ECD7.D	04/06/2023	
SIB-SW-WR198-030923	23C0692-01	04062307ECD7.D	04/06/2023	
LCS Dup	BLC0803-BSD1	04062306ECD7.D	04/06/2023	
LCS	BLC0803-BS1	04062305ECD7.D	04/06/2023	
SIB-SW-WR30-030923	23C0692-06	04062313ECD7.D	04/06/2023	
SIB-SW-WR71-030923	23C0692-05	04062312ECD7.D	04/06/2023	
SIB-SW-WR15-030923	23C0692-03	04062309ECD7.D	04/06/2023	
Blank	BLC0803-BLK1	04062304ECD7.D	04/06/2023	

Analytical Resources, LLC
Analytical Chemists and Consultants

CLEANUP BENCH SHEET

CLD0037

Matrix: Water **Cleanup using: Organics - EPA 3630C Silica Gel Cleanup - uL** **Printed: 4/6/2023 10:43:49AM**

Lab Number	Sample Container	Sample Name	Extract Container	Initial (uL)	Final (uL)	Analysis	Clean Up Date	Cleaned By	Cleanup Comments
23C0692-01	A	SIB-SW-WR198-030923	A 01	0.5	0.5	8082A PCB Water 0.01	4/6/2023	LMJ	
23C0692-02	A	SIB-SW-WR186-030923	A 01	0.5	0.5	8082A PCB Water 0.01	4/6/2023	LMJ	
23C0692-03	A	SIB-SW-WR15-030923	A 01	0.5	0.5	8082A PCB Water 0.01	4/6/2023	LMJ	
23C0692-04	A	SIB-SW-WR428-030923	A 01	0.5	0.5	8082A PCB Water 0.01	4/6/2023	LMJ	
23C0692-05	A	SIB-SW-WR71-030923	A 01	0.5	0.5	8082A PCB Water 0.01	4/6/2023	LMJ	
23C0692-06	A	SIB-SW-WR30-030923	A 01	0.5	0.5	8082A PCB Water 0.01	4/6/2023	LMJ	
BLC0803-BLK1	-	Blank	-	0.5	0.5	-	4/6/2023	LMJ	
BLC0803-BS1	-	LCS	-	0.5	0.5	-	4/6/2023	LMJ	
BLC0803-BSD1	-	LCS Dup	-	0.5	0.5	-	4/6/2023	LMJ	

Analytical Resources, LLC
Analytical Chemists and Consultants

CLEANUP BATCH SUMMARY

Laboratory:	Analytical Resources, LLC	SDG:	23C0692
Client:	HydroGeoLogic, Inc.	Project:	Portland Harbor Superfund Site 2021-20
Cleanup Batch:	CLD0038	Cleanup Type:	Sulfur
Cleanup Method:	EPA 3660B Sulfur Cleanup - uL	Analysis:	EPA 8082A

SAMPLE NAME	LAB SAMPLE ID	LAB FILE ID	DATE PREPARED	OBSERVATIONS
SIB-SW-WR30-030923	23C0692-06	04062313ECD7.D	04/06/2023	
SIB-SW-WR428-030923	23C0692-04	04062310ECD7.D	04/06/2023	
SIB-SW-WR71-030923	23C0692-05	04062312ECD7.D	04/06/2023	
SIB-SW-WR186-030923	23C0692-02	04062308ECD7.D	04/06/2023	
SIB-SW-WR15-030923	23C0692-03	04062309ECD7.D	04/06/2023	
SIB-SW-WR198-030923	23C0692-01	04062307ECD7.D	04/06/2023	
LCS Dup	BLC0803-BSD1	04062306ECD7.D	04/06/2023	
LCS	BLC0803-BS1	04062305ECD7.D	04/06/2023	
Blank	BLC0803-BLK1	04062304ECD7.D	04/06/2023	

Analytical Resources, LLC
Analytical Chemists and Consultants

CLEANUP BENCH SHEET

CLD0038

Matrix: Water **Cleanup using: Organics - EPA 3660B Sulfur Cleanup - uL** **Printed: 4/6/2023 10:44:22AM**

Lab Number	Sample Container	Sample Name	Extract Container	Initial (uL)	Final (uL)	Analysis	Clean Up Date	Cleaned By	Cleanup Comments
23C0692-01	A	SIB-SW-WR198-030923	A 01	0.5	0.5	8082A PCB Water 0.01	4/6/2023	LMJ	
23C0692-02	A	SIB-SW-WR186-030923	A 01	0.5	0.5	8082A PCB Water 0.01	4/6/2023	LMJ	
23C0692-03	A	SIB-SW-WR15-030923	A 01	0.5	0.5	8082A PCB Water 0.01	4/6/2023	LMJ	
23C0692-04	A	SIB-SW-WR428-030923	A 01	0.5	0.5	8082A PCB Water 0.01	4/6/2023	LMJ	
23C0692-05	A	SIB-SW-WR71-030923	A 01	0.5	0.5	8082A PCB Water 0.01	4/6/2023	LMJ	
23C0692-06	A	SIB-SW-WR30-030923	A 01	0.5	0.5	8082A PCB Water 0.01	4/6/2023	LMJ	
BLC0803-BLK1	-	Blank	-	0.5	0.5	-	4/6/2023	LMJ	
BLC0803-BS1	-	LCS	-	0.5	0.5	-	4/6/2023	LMJ	
BLC0803-BSD1	-	LCS Dup	-	0.5	0.5	-	4/6/2023	LMJ	

Analytical Resources, LLC
Analytical Chemists and Consultants

CLEANUP BATCH SUMMARY

Laboratory:	Analytical Resources, LLC	SDG:	23C0692
Client:	HydroGeoLogic, Inc.	Project:	Portland Harbor Superfund Site 2021-20
Cleanup Batch:	CLD0039	Cleanup Type:	Sulfuric Acid
Cleanup Method:	EPA 3665 Sulfuric Acid Cleanup - uL	Analysis:	EPA 8082A

SAMPLE NAME	LAB SAMPLE ID	LAB FILE ID	DATE PREPARED	OBSERVATIONS
SIB-SW-WR15-030923	23C0692-03	04062309ECD7.D	04/06/2023	
LCS	BLC0803-BS1	04062305ECD7.D	04/06/2023	
Blank	BLC0803-BLK1	04062304ECD7.D	04/06/2023	
SIB-SW-WR71-030923	23C0692-05	04062312ECD7.D	04/06/2023	
SIB-SW-WR428-030923	23C0692-04	04062310ECD7.D	04/06/2023	
SIB-SW-WR30-030923	23C0692-06	04062313ECD7.D	04/06/2023	
LCS Dup	BLC0803-BSD1	04062306ECD7.D	04/06/2023	
SIB-SW-WR186-030923	23C0692-02	04062308ECD7.D	04/06/2023	
SIB-SW-WR198-030923	23C0692-01	04062307ECD7.D	04/06/2023	

Analytical Resources, LLC
Analytical Chemists and Consultants

CLEANUP BENCH SHEET

CLD0039

Matrix: Water **Cleanup using: Organics - EPA 3665 Sulfuric Acid Cleanup - uL** **Printed: 4/6/2023 10:44:45AM**

Lab Number	Sample Container	Sample Name	Extract Container	Initial (uL)	Final (uL)	Analysis	Clean Up Date	Cleaned By	Cleanup Comments
23C0692-01	A	SIB-SW-WR198-030923	A 01	0.5	0.5	8082A PCB Water 0.01	4/6/2023	LMJ	
23C0692-02	A	SIB-SW-WR186-030923	A 01	0.5	0.5	8082A PCB Water 0.01	4/6/2023	LMJ	
23C0692-03	A	SIB-SW-WR15-030923	A 01	0.5	0.5	8082A PCB Water 0.01	4/6/2023	LMJ	
23C0692-04	A	SIB-SW-WR428-030923	A 01	0.5	0.5	8082A PCB Water 0.01	4/6/2023	LMJ	
23C0692-05	A	SIB-SW-WR71-030923	A 01	0.5	0.5	8082A PCB Water 0.01	4/6/2023	LMJ	
23C0692-06	A	SIB-SW-WR30-030923	A 01	0.5	0.5	8082A PCB Water 0.01	4/6/2023	LMJ	
BLC0803-BLK1	-	Blank	-	0.5	0.5	-	4/6/2023	LMJ	
BLC0803-BS1	-	LCS	-	0.5	0.5	-	4/6/2023	LMJ	
BLC0803-BSD1	-	LCS Dup	-	0.5	0.5	-	4/6/2023	LMJ	

Analytical Resources, LLC
Analytical Chemists and Consultants

Form I

METHOD BLANK DATA SHEET

EPA 8082A

Blank

Laboratory:	Analytical Resources, LLC			SDG:	23C0692
Client:	HydroGeoLogic, Inc.			Project:	Portland Harbor Superfund Site 2(
Matrix:	Water	Laboratory ID:	BLC0803-BLK1	File ID:	04062304ECD7.D
Sampled:	N/A	Prepared:	03/31/23 09:04	Analyzed:	04/06/23 12:28
Solids:		Preparation:	EPA 3510C SepF	Initial/Final:	1000 mL / 0.5 mL
Batch:	BLC0803	Sequence:	SLD0092	Calibration:	GB00069
Instrument:	ECD7	Column:	ZB5	Cleanups:	Silica Gel, Sulfur, Sulfuric Acid

CAS NO.	COMPOUND	DILUTION	CONC. (ug/L)	Q	DL	LOD	LOQ
12674-11-2	Aroclor 1016	1	0.005	U	0.002	0.005	0.010
11104-28-2	Aroclor 1221	1	0.005	U	0.002	0.005	0.010
11141-16-5	Aroclor 1232	1	0.005	U	0.002	0.005	0.010
53469-21-9	Aroclor 1242	1	0.005	U	0.002	0.005	0.010
12672-29-6	Aroclor 1248	1	0.005	U	0.002	0.005	0.010
11097-69-1	Aroclor 1254	1	0.005	U	0.002	0.005	0.010
11096-82-5	Aroclor 1260	1	0.005	U	0.003	0.005	0.010
37324-23-5	Aroclor 1262	1	0.005	U	0.003	0.005	0.010
11100-14-4	Aroclor 1268	1	0.005	U	0.003	0.005	0.010

SURROGATES	ADDED (ug/L)	CONC. (ug/L)	% REC	QC LIMITS	Q
Decachlorobiphenyl	0.020000	0.0131	65.5	29 - 120	
Tetrachlorometaxylene	0.020000	0.0142	70.8	32 - 120	
Decachlorobiphenyl [2C]	0.020000	0.0134	67.2	29 - 120	
Tetrachlorometaxylene [2C]	0.020000	0.0129	64.5	32 - 120	

[2C] indicates second-column analyte, present if quantification on any batch samples used second column data.

Analytical Resources Inc.
Dual Column 608/8082 PCB Quantitation Report

Data file 1: /230406.b/04062304ECD7.D
Data file 2: /230406.b/230406.b/04062304ECD7.D
Method: \\target\share\chem4\ecd7.i\230406.b\PCB.m
Compound Sublist: PCB.sub
Instrument, Inj. Vol.: ecd7.i, 2ul
Quant Method: Internal Std

ARI ID: BLC0803-BLK1
Client ID:
Injection Date: 06-APR-2023 12:28
Report Date: 04/06/2023 13:39
Matrix: NONE
Dilution Factor: 1.0

SURROGATES

ZB5 Col RT	Shift	Response	ZB35 Col RT	Shift	Response	ZB5 on col	ZB35 on col	RPD	Compound/Flag
5.809	-0.001	262664	5.693	-0.001	149364	28.3	25.8	9.4	Tetrachloro-m-xylene
13.896	-0.004	413610	14.121	-0.002	292397	26.2	26.9	2.6	Decachlorobiphenyl

* Indicates RPD > 40%

INTERNAL STANDARD SUMMARY

Column 1

Standard Cpnd	Standard Area*	Sample Area	%D
Bromo-Nitrobenzene	673778	620884	-7.9
Hexabromobiphenyl	1429847	1602172	12.1

Column 2

Standard Cpnd	Standard Area*	Sample Area	%D
Bromo-Nitrobenzene	315256	394651	25.2
Hexabromobiphenyl	513946	714030	38.9

* Standard Areas taken from Initial Cal Level 3
Initial Calibration Date: 24-FEB-2023
<- Indicates standard response outside Limits (-50 to +100%)

	ZB5 Col					ZB35 Col				
Aroclor	Peak#	RT	Shift	Area	Amount	Peak#	RT	Shift	Area	Amount
Aroclor-1016	1	---			0.0	1	---			0.0
Aroclor-1016	2	---			0.0	2	---			0.0
Aroclor-1016	3	---			0.0	3	---			0.0
Aroclor-1016	4	---			0.0	4	---			0.0
	Col1Ave: <3 Quant Peaks					Col2Ave: <3 Quant Peaks				
Aroclor-1221	1	---			0.0	1	---			0.0
Aroclor-1221	2	---			0.0	2	---			0.0
Aroclor-1221	3	---			0.0	3	---			0.0
	Col1Ave: <3 Quant Peaks					Col2Ave: <3 Quant Peaks				
Aroclor-1232	1	---			0.0	1	---			0.0
Aroclor-1232	2	---			0.0	2	---			0.0
Aroclor-1232	3	---			0.0	3	---			0.0
Aroclor-1232	4	---			0.0	4	---			0.0
	Col1Ave: <3 Quant Peaks					Col2Ave: <3 Quant Peaks				
Aroclor-1242	1	---			0.0	1	---			0.0
Aroclor-1242	2	---			0.0	2	---			0.0
Aroclor-1242	3	---			0.0	3	---			0.0
Aroclor-1242	4	---			0.0	4	---			0.0
	Col1Ave: <3 Quant Peaks					Col2Ave: <3 Quant Peaks				
Aroclor-1248	1	---			0.0	1	---			0.0
Aroclor-1248	2	---			0.0	2	---			0.0
Aroclor-1248	3	---			0.0	3	---			0.0
Aroclor-1248	4	---			0.0	4	---			0.0
	Col1Ave: <3 Quant Peaks					Col2Ave: <3 Quant Peaks				
Aroclor-1254	1	---			0.0	1	---			0.0
Aroclor-1254	2	---			0.0	2	---			0.0
Aroclor-1254	3	---			0.0	3	---			0.0
Aroclor-1254	4	---			0.0	4	---			0.0
Aroclor-1254	5	---			0.0	5	---			0.0
	Col1Ave: <3 Quant Peaks					Col2Ave: <3 Quant Peaks				
Aroclor-1260	1	---			0.0	1	---			0.0
Aroclor-1260	2	---			0.0	2	---			0.0
Aroclor-1260	3	---			0.0	3	---			0.0
Aroclor-1260	4	---			0.0	4	---			0.0
Aroclor-1260	5	---			0.0	NS	---			----
	Col1Ave: <3 Quant Peaks					Col2Ave: <3 Quant Peaks				
Aroclor-1262	1	---			0.0	1	---			0.0
Aroclor-1262	2	---			0.0	2	---			0.0
Aroclor-1262	3	---			0.0	3	---			0.0
Aroclor-1262	4	---			0.0	4	---			0.0
	Col1Ave: <3 Quant Peaks					Col2Ave: <3 Quant Peaks				
Aroclor-1268	1	---			0.0	1	---			0.0
Aroclor-1268	2	---			0.0	2	---			0.0
Aroclor-1268	3	---			0.0	3	---			0.0
Aroclor-1268	4	---			0.0	4	---			0.0
	Col1Ave: <3 Quant Peaks					Col2Ave: <3 Quant Peaks				

Total PCB Area Col1 (5.910 - 13.800) = 452208 Col1 Total PCB = 0.1 ppm*

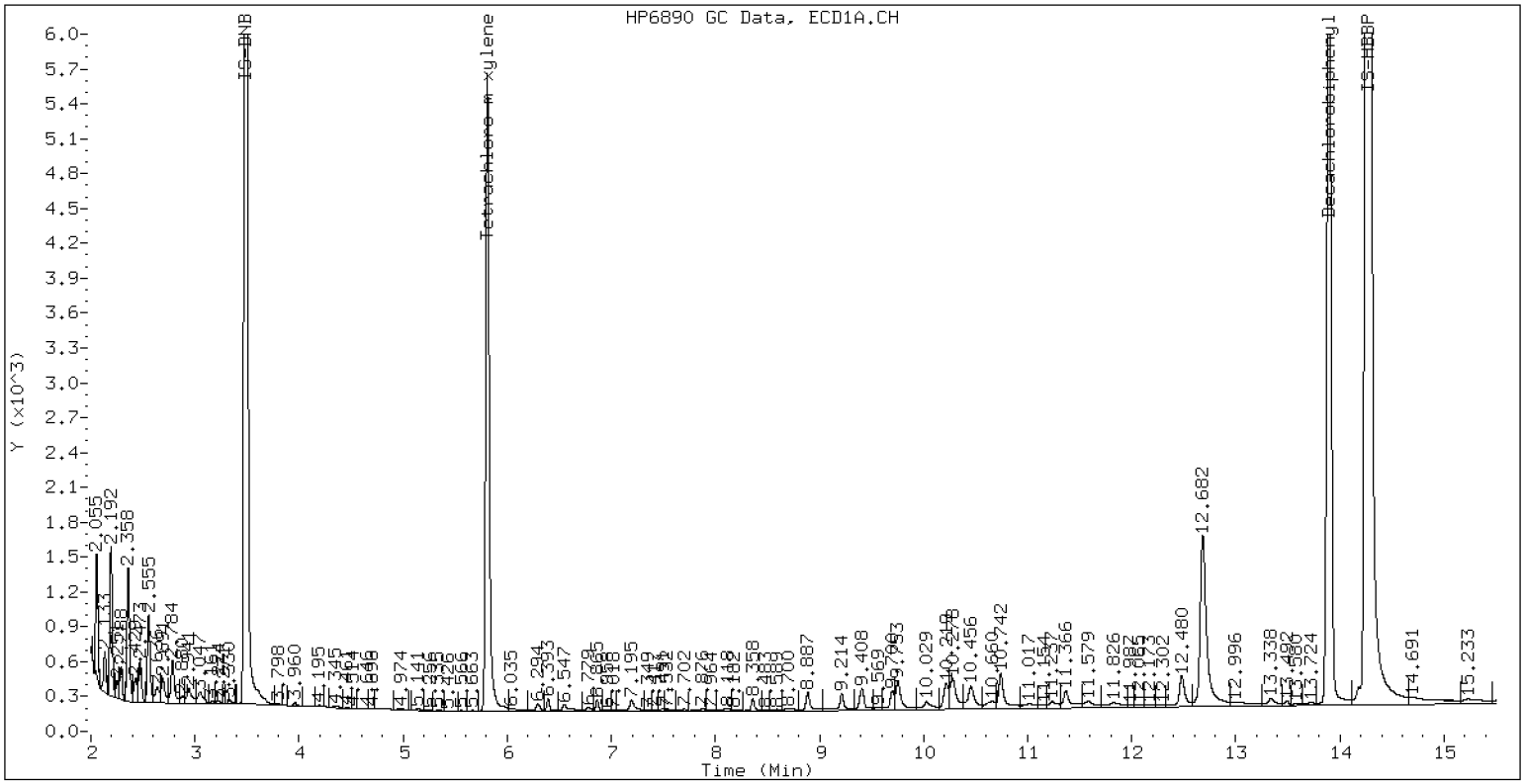
Total PCB Area Col2 (5.795 - 14.023) = 167678 Col2 Total PCB = 0.0 ppm*

* Quantitated against AR1660 0.25ppm in Ical

PCB-Form 10 Mod.

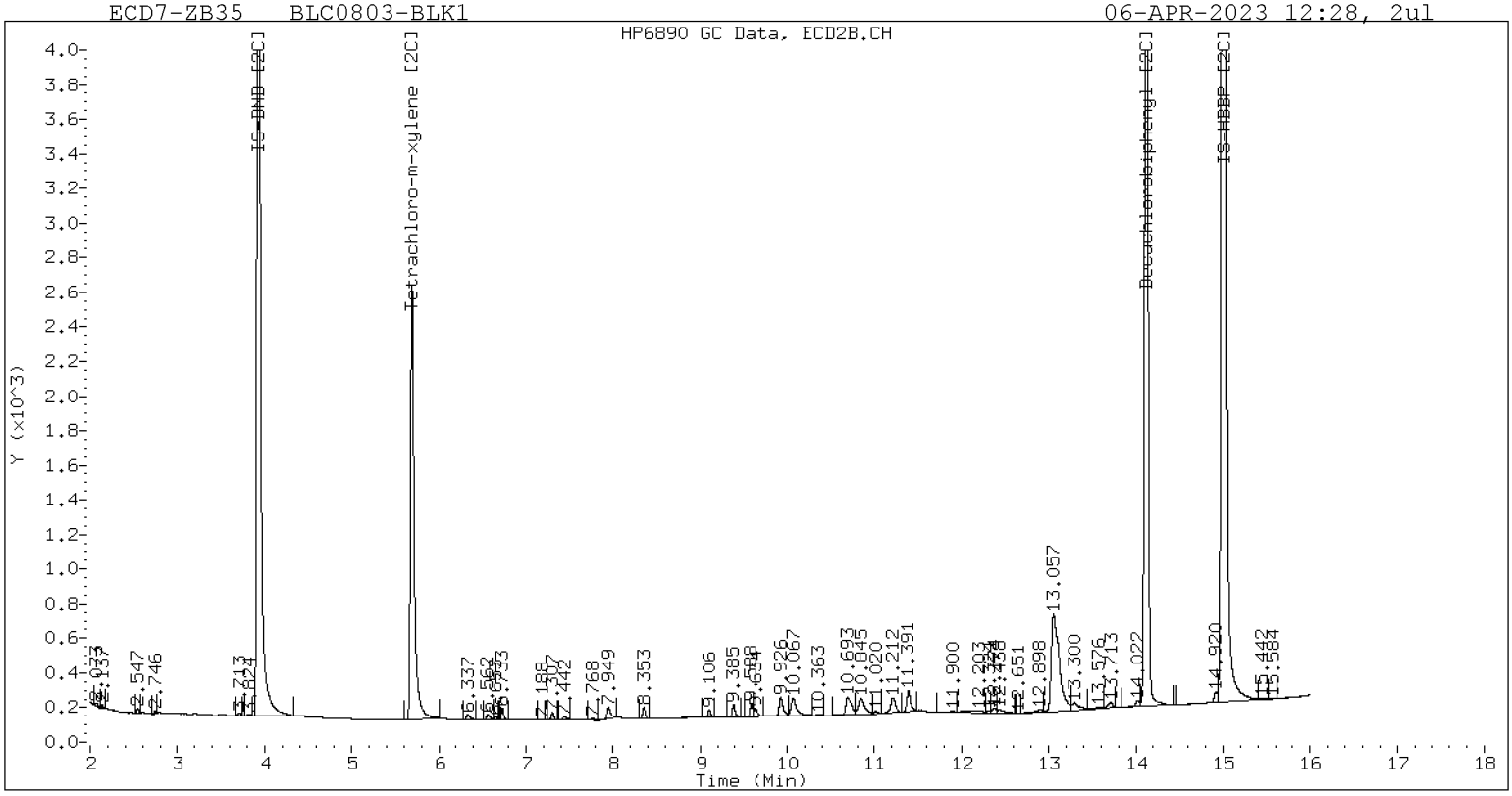
PCB Dual Column Chromatograms

ECD7-ZB5 BLC0803-BLK1 06-APR-2023 12:28, 2ul



ZB-5 Manual Integration: NO

ECD7-ZB35 BLC0803-BLK1 06-APR-2023 12:28, 2ul



ZB-35 Manual Integration: NO

Analytical Resources, LLC
Analytical Chemists and Consultants

LCS / LCS DUPLICATE RECOVERY

EPA 8082A

Laboratory:	Analytical Resources, LLC	SDG:	23C0692
Client:	HydroGeoLogic, Inc.	Project:	Portland Harbor Superfund Site 2021-2023
Matrix:	Water	Analyzed:	04/06/23 12:49
Batch:	BLC0803	Laboratory ID:	BLC0803-BS1
Preparation:	EPA 3510C SepF	Sequence Name:	LCS
Initial/Final:	1000 mL / 0.5 mL		

COMPOUND	SPIKE ADDED (ug/L)	LCS CONCENTRATION (ug/L)	Q	LCS % REC. #	QC LIMITS REC.
Aroclor 1016 [2C]	0.0500	0.033		65.5	54 - 120
Aroclor 1260	0.0500	0.029		58.1	51 - 128

* Indicates values outside of QC limits

COMPOUND	SPIKE ADDED (ug/L)	LCSD CONCENTRATION (ug/L)	Q	LCSD % REC. #	% RPD #	QC LIMITS	
						RPD	REC.
Aroclor 1016	0.0500	0.039		78.6	19.4	30	54 - 120
Aroclor 1260	0.0500	0.035		70.0	18.5	30	51 - 128

* Indicates values outside of QC limits

Analytical Resources Inc.
Dual Column 608/8082 PCB Quantitation Report

Data file 1: /230406.b/04062305ECD7.D
Data file 2: /230406.b/230406.b/04062305ECD7.D
Method: \\target\share\chem4\ecd7.i\230406.b\PCB.m
Compound Sublist: PCB.sub
Instrument, Inj. Vol.: ecd7.i, 2ul
Quant Method: Internal Std

ARI ID: BLC0803-BS1
Client ID:
Injection Date: 06-APR-2023 12:49
Report Date: 04/06/2023 13:39
Matrix: NONE
Dilution Factor: 1.0

SURROGATES

ZB5 Col RT	ZB5 Col Shift	ZB5 Col Response	ZB35 Col RT	ZB35 Col Shift	ZB35 Col Response	ZB5 on col	ZB35 on col	RPD	Compound/Flag
5.809	-0.001	222996	5.693	-0.001	122904	23.2	20.0	15.0	Tetrachloro-m-xylene
13.896	-0.004	315311	14.121	-0.002	220179	18.9	19.0	0.2	Decachlorobiphenyl

* Indicates RPD > 40%

INTERNAL STANDARD SUMMARY

Column 1

Standard Cpnd	Standard Area*	Sample Area	%D
Bromo-Nitrobenzene	673778	642391	-4.7
Hexabromobiphenyl	1429847	1690923	18.3

Column 2

Standard Cpnd	Standard Area*	Sample Area	%D
Bromo-Nitrobenzene	315256	418539	32.8
Hexabromobiphenyl	513946	762095	48.3

* Standard Areas taken from Initial Cal Level 3
Initial Calibration Date: 24-FEB-2023
<- Indicates standard response outside Limits (-50 to +100%)

	ZB5 Col					ZB35 Col				
Aroclor	Peak#	RT	Shift	Area	Amount	Peak#	RT	Shift	Area	Amount
Aroclor-1016	1	7.271	-0.004	17327	71.0	1	7.259	-0.002	14525	59.3
Aroclor-1016	2	7.667	-0.014	44115	59.3	2	7.880	-0.008	30426	61.2
Aroclor-1016	3	7.801	-0.006	24669	67.9	3	8.089	-0.006	15824	70.5
Aroclor-1016	4	8.410	-0.008	14181	60.4	4	8.315	-0.006	12495	71.0
Total Col1Ave (4 peaks):					64.7	Total Col2Ave (4 peaks):				65.5 RPD = 1
Corrected Ave (3 peaks):					62.6	Corrected Ave (3 peaks):				63.7 RPD = 2
Aroclor-1221	1	---			0.0	1	4.952	-0.004	318	8.0
Aroclor-1221	2	6.131	-0.001	2756	26.8	2	6.332	0.036	2105	28.1
Aroclor-1221	3	6.387	0.005	11906	49.8	3	6.631	0.009	6237	51.1
Col1Ave: <3 Quant Peaks						Col2Ave: 29.1				
Aroclor-1232	1	---			0.0	1	4.952	-0.004	318	14.8
Aroclor-1232	2	6.131	0.000	2756	40.4	2	7.259	0.005	14525	136.5
Aroclor-1232	3	7.667	0.011	44115	142.8	3	7.880	0.020	30426	143.0
Aroclor-1232	4	8.588	0.007	17622	134.2	4	8.722	0.007	8943	146.0
Total Col1Ave (3 peaks):					105.8	Total Col2Ave (4 peaks):				110.1 RPD = 4
Corrected Ave: < 3 Peaks						Corrected Ave (3 peaks):				98.1
Aroclor-1242	1	7.271	0.000	17327	87.0	1	7.259	0.003	14525	74.7
Aroclor-1242	2	7.667	0.011	44115	73.0	2	7.880	0.022	30426	74.4
Aroclor-1242	3	8.410	0.005	14181	75.4	3	9.202	0.035	1533	12.1
Aroclor-1242	4	8.588	0.009	17622	63.4	4	9.587	-0.010	1883	12.1
Total Col1Ave (4 peaks):					74.7	Total Col2Ave (4 peaks):				43.3 RPD = 53*
Corrected Ave (3 peaks):					70.6	Corrected Ave (3 peaks):				32.9 RPD = 73*
Aroclor-1248	1	8.410	0.005	14181	45.2	1	8.315	0.008	12495	62.5
Aroclor-1248	2	8.588	0.007	17622	44.2	2	8.722	0.007	8943	43.3
Aroclor-1248	3	8.996	-0.002	19434	25.9	3	9.202	0.036	1533	6.4
Aroclor-1248	4	9.309	0.014	15039	39.3	4	9.587	-0.003	1883	6.6
Total Col1Ave (4 peaks):					38.7	Total Col2Ave (4 peaks):				29.7 RPD = 26
Corrected Ave (3 peaks):					36.5	Corrected Ave (3 peaks):				18.8 RPD = 64*
Aroclor-1254	1	9.309	-0.008	15039	23.3	1	9.460	-0.007	8905	28.0
Aroclor-1254	2	9.407	0.008	6245	21.5	2	9.979	-0.009	1886	7.4
Aroclor-1254	3	9.692	0.003	5018	12.1	3	10.155	0.009	20526	37.1
Aroclor-1254	4	9.818	-0.012	8885	11.0	4	10.378	-0.014	25705	47.6
Aroclor-1254	5	10.127	-0.085	42794	84.7	5	10.579	-0.006	32309	98.3
Total Col1Ave (5 peaks):					30.5	Total Col2Ave (5 peaks):				43.7 RPD = 35
Corrected Ave (4 peaks):					17.0	Corrected Ave (4 peaks):				30.0 RPD = 55*
Aroclor-1260	1	11.051	-0.005	36486	60.0	1	11.661	-0.002	25414	56.7
Aroclor-1260	2	11.369	-0.004	38723	60.9	2	11.928	-0.004	62875	55.0
Aroclor-1260	3	11.744	-0.007	99020	58.7	3	12.443	-0.001	14750	48.6
Aroclor-1260	4	12.151	-0.006	47962	56.5	4	12.512	-0.003	40165	52.1
Aroclor-1260	5	12.251	-0.003	19844	54.3	NS	---			----
Total Col1Ave (5 peaks):					58.1	Total Col2Ave (4 peaks):				53.1 RPD = 9
Corrected Ave (4 peaks):					57.4	Corrected Ave (3 peaks):				51.9 RPD = 10
Aroclor-1262	1	10.840	0.011	70618	136.1	1	11.206	0.006	26998	41.5
Aroclor-1262	2	12.251	0.008	19844	23.5	2	11.661	0.010	25414	45.9
Aroclor-1262	3	12.327	0.008	23450	25.8	3	12.443	0.010	14750	23.5
Aroclor-1262	4	12.996	0.009	24728	29.8	4	12.512	0.010	40165	40.8
Total Col1Ave (4 peaks):					53.8	Total Col2Ave (4 peaks):				37.9 RPD = 35
Corrected Ave (3 peaks):					26.4	Corrected Ave (3 peaks):				35.2 RPD = 29
Aroclor-1268	1	12.251	0.005	19844	9.2	1	12.443	0.011	14750	9.6
Aroclor-1268	2	12.327	0.010	23450	10.9	2	12.512	0.012	40165	24.3
Aroclor-1268	3	12.716	0.017	47563	25.9	3	12.896	0.005	1575	1.1
Aroclor-1268	4	13.494	0.005	6263	1.0	4	13.713	0.004	5584	1.2
Total Col1Ave (4 peaks):					11.8	Total Col2Ave (4 peaks):				9.1 RPD = 26
Corrected Ave (3 peaks):					7.0	Corrected Ave (3 peaks):				4.0 RPD = 55*

Total PCB Area Col1 (5.910 - 13.800) = 1144646 Col1 Total PCB = 0.1 ppm*

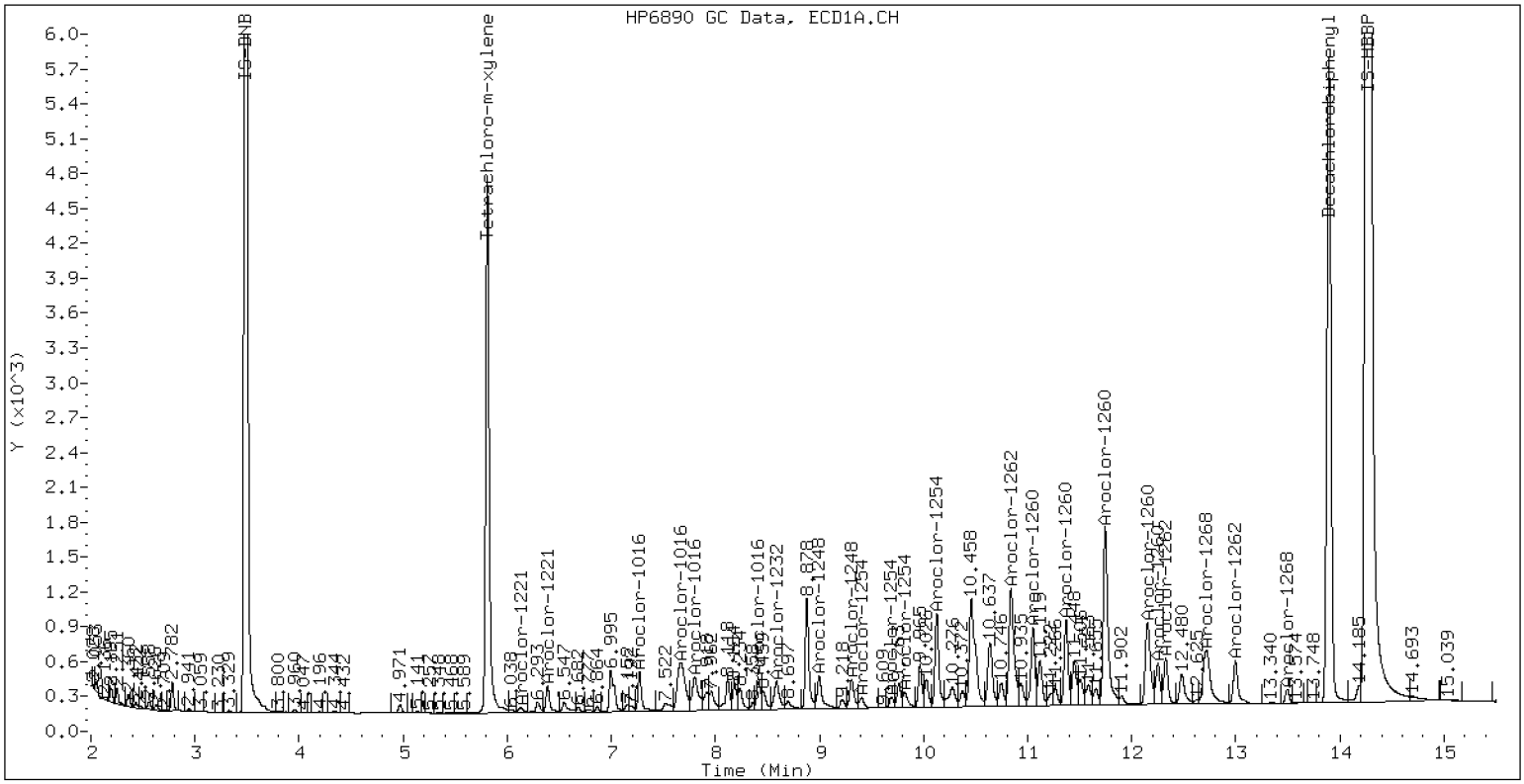
Total PCB Area Col2 (5.795 - 14.023) = 661616 Col2 Total PCB = 0.1 ppm*

* Quantitated against AR1660 0.25ppm in Ical

PCB-Form 10 Mod.

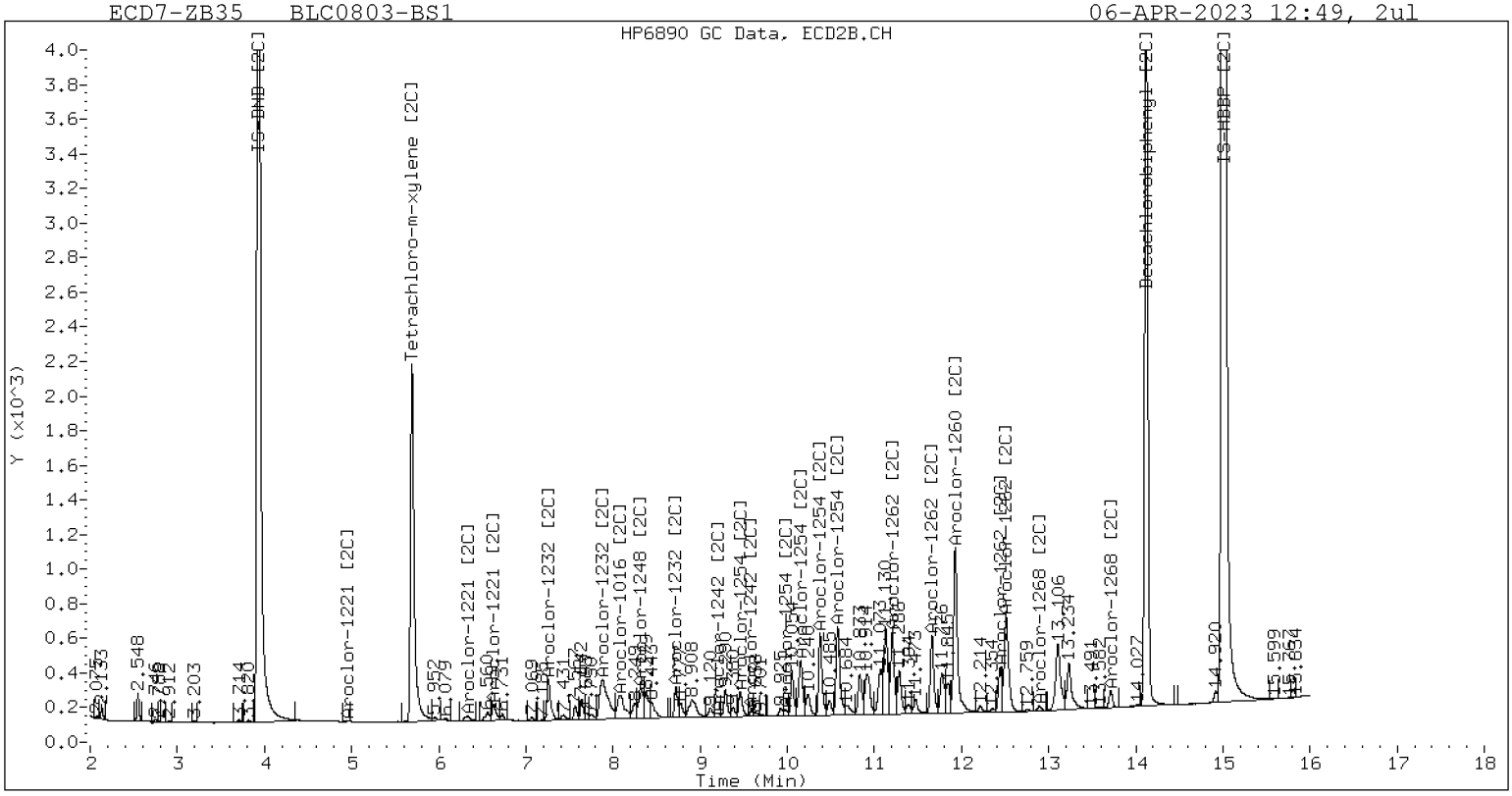
PCB Dual Column Chromatograms

ECD7-ZB5 BLC0803-BS1 06-APR-2023 12:49, 2ul



ZB-5 Manual Integration: NO

ECD7-ZB35 BLC0803-BS1 06-APR-2023 12:49, 2ul



ZB-35 Manual Integration: NO

Analytical Resources Inc.
Dual Column 608/8082 PCB Quantitation Report

Data file 1: /230406.b/04062306ECD7.D
Data file 2: /230406.b/230406.b/04062306ECD7.D
Method: \\target\share\chem4\ecd7.i\230406.b\PCB.m
Compound Sublist: PCB.sub
Instrument, Inj. Vol.: ecd7.i, 2ul
Quant Method: Internal Std

ARI ID: BLC0803-BSD1
Client ID:
Injection Date: 06-APR-2023 13:10
Report Date: 04/06/2023 13:39
Matrix: NONE
Dilution Factor: 1.0

SURROGATES

ZB5 Col RT	Shift	Response	ZB35 Col RT	Shift	Response	ZB5 on col	ZB35 on col	RPD	Compound/Flag
5.809	-0.001	253621	5.693	-0.001	145206	27.2	24.2	11.9	Tetrachloro-m-xylene
13.895	-0.004	355554	14.121	-0.002	246801	21.4	21.6	0.9	Decachlorobiphenyl

* Indicates RPD > 40%

INTERNAL STANDARD SUMMARY

Column 1

Standard Cpnd	Standard Area*	Sample Area	%D
Bromo-Nitrobenzene	673778	624474	-7.3
Hexabromobiphenyl	1429847	1687529	18.0

Column 2

Standard Cpnd	Standard Area*	Sample Area	%D
Bromo-Nitrobenzene	315256	409719	30.0
Hexabromobiphenyl	513946	750544	46.0

* Standard Areas taken from Initial Cal Level 3
Initial Calibration Date: 24-FEB-2023
<- Indicates standard response outside Limits (-50 to +100%)

	ZB5 Col					ZB35 Col				
Aroclor	Peak#	RT	Shift	Area	Amount	Peak#	RT	Shift	Area	Amount
Aroclor-1016	1	7.272	-0.004	18900	79.7	1	7.258	-0.002	16358	68.2
Aroclor-1016	2	7.668	-0.013	52743	72.9	2	7.878	-0.010	33921	69.7
Aroclor-1016	3	7.800	-0.006	28649	81.2	3	8.081	-0.015	16956	77.2
Aroclor-1016	4	8.410	-0.008	18365	80.5	4	8.316	-0.005	13743	79.7
Total Col1Ave (4 peaks):					78.6	Total Col2Ave (4 peaks):				73.7 RPD = 6
Corrected Ave (3 peaks):					77.7	Corrected Ave (3 peaks):				71.7 RPD = 8
Aroclor-1221	1	---			0.0	1	4.950	-0.006	653	16.8
Aroclor-1221	2	6.132	-0.000	3282	32.8	2	6.331	0.035	2535	34.5
Aroclor-1221	3	6.387	0.005	13530	58.3	3	6.632	0.010	6959	58.2
Col1Ave: <3 Quant Peaks						Col2Ave: 36.5				
Aroclor-1232	1	---			0.0	1	4.950	-0.006	653	31.1
Aroclor-1232	2	6.132	0.001	3282	49.5	2	7.258	0.004	16358	157.0
Aroclor-1232	3	7.668	0.012	52743	175.6	3	7.878	0.017	33921	162.9
Aroclor-1232	4	8.587	0.006	20454	160.2	4	8.723	0.008	9383	156.5
Total Col1Ave (3 peaks):					128.4	Total Col2Ave (4 peaks):				126.9 RPD = 1
Corrected Ave: < 3 Peaks						Corrected Ave (3 peaks):				114.9
Aroclor-1242	1	7.272	0.001	18900	97.7	1	7.258	0.003	16358	85.9
Aroclor-1242	2	7.668	0.012	52743	89.7	2	7.878	0.020	33921	84.8
Aroclor-1242	3	8.410	0.004	18365	100.4	3	9.186	0.019	2105	16.9
Aroclor-1242	4	8.587	0.008	20454	75.7	4	9.587	-0.010	1965	13.0
Total Col1Ave (4 peaks):					90.9	Total Col2Ave (4 peaks):				50.1 RPD = 58*
Corrected Ave (3 peaks):					87.7	Corrected Ave (3 peaks):				38.2 RPD = 79*
Aroclor-1248	1	8.410	0.004	18365	60.3	1	8.316	0.008	13743	70.3
Aroclor-1248	2	8.587	0.007	20454	52.8	2	8.723	0.008	9383	46.4
Aroclor-1248	3	8.998	-0.001	23030	31.5	3	9.186	0.020	2105	9.0
Aroclor-1248	4	9.309	0.014	18194	48.9	4	9.587	-0.003	1965	7.0
Total Col1Ave (4 peaks):					48.4	Total Col2Ave (4 peaks):				33.2 RPD = 37
Corrected Ave (3 peaks):					44.4	Corrected Ave (3 peaks):				20.8 RPD = 72*
Aroclor-1254	1	9.309	-0.008	18194	29.0	1	9.460	-0.007	10345	33.2
Aroclor-1254	2	9.405	0.006	7561	26.8	2	9.981	-0.007	2499	10.0
Aroclor-1254	3	9.692	0.003	6079	15.1	3	10.154	0.008	23325	43.0
Aroclor-1254	4	9.820	-0.010	11122	14.2	4	10.378	-0.013	29852	56.5
Aroclor-1254	5	10.126	-0.086	50858	103.5	5	10.579	-0.006	37818	117.5
Total Col1Ave (5 peaks):					37.7	Total Col2Ave (5 peaks):				52.1 RPD = 32
Corrected Ave (4 peaks):					21.3	Corrected Ave (4 peaks):				35.7 RPD = 51*
Aroclor-1260	1	11.051	-0.005	43894	72.3	1	11.660	-0.003	29298	66.4
Aroclor-1260	2	11.368	-0.005	46204	72.8	2	11.928	-0.004	71486	63.5
Aroclor-1260	3	11.745	-0.006	119088	70.8	3	12.442	-0.002	16842	56.3
Aroclor-1260	4	12.151	-0.006	56996	67.3	4	12.511	-0.003	45532	60.0
Aroclor-1260	5	12.250	-0.004	24290	66.6	NS	---			----
Total Col1Ave (5 peaks):					70.0	Total Col2Ave (4 peaks):				61.5 RPD = 13
Corrected Ave (4 peaks):					69.2	Corrected Ave (3 peaks):				59.9 RPD = 14
Aroclor-1262	1	10.839	0.011	83971	162.2	1	11.207	0.007	30524	47.6
Aroclor-1262	2	12.250	0.007	24290	28.8	2	11.660	0.009	29298	53.7
Aroclor-1262	3	12.325	0.007	29066	32.1	3	12.442	0.008	16842	27.2
Aroclor-1262	4	12.996	0.009	28071	33.9	4	12.511	0.009	45532	46.9
Total Col1Ave (4 peaks):					64.3	Total Col2Ave (4 peaks):				43.9 RPD = 38
Corrected Ave (3 peaks):					31.6	Corrected Ave (3 peaks):				40.6 RPD = 25
Aroclor-1268	1	12.250	0.004	24290	11.2	1	12.442	0.010	16842	11.1
Aroclor-1268	2	12.325	0.009	29066	13.6	2	12.511	0.011	45532	28.0
Aroclor-1268	3	12.716	0.017	46143	25.2	3	12.895	0.004	1834	1.3
Aroclor-1268	4	13.493	0.003	7503	1.2	4	13.712	0.003	6340	1.4
Total Col1Ave (4 peaks):					12.8	Total Col2Ave (4 peaks):				10.5 RPD = 20
Corrected Ave (3 peaks):					8.7	Corrected Ave (3 peaks):				4.6 RPD = 61*

Total PCB Area Col1 (5.910 - 13.800) = 1297043 Col1 Total PCB = 0.2 ppm*

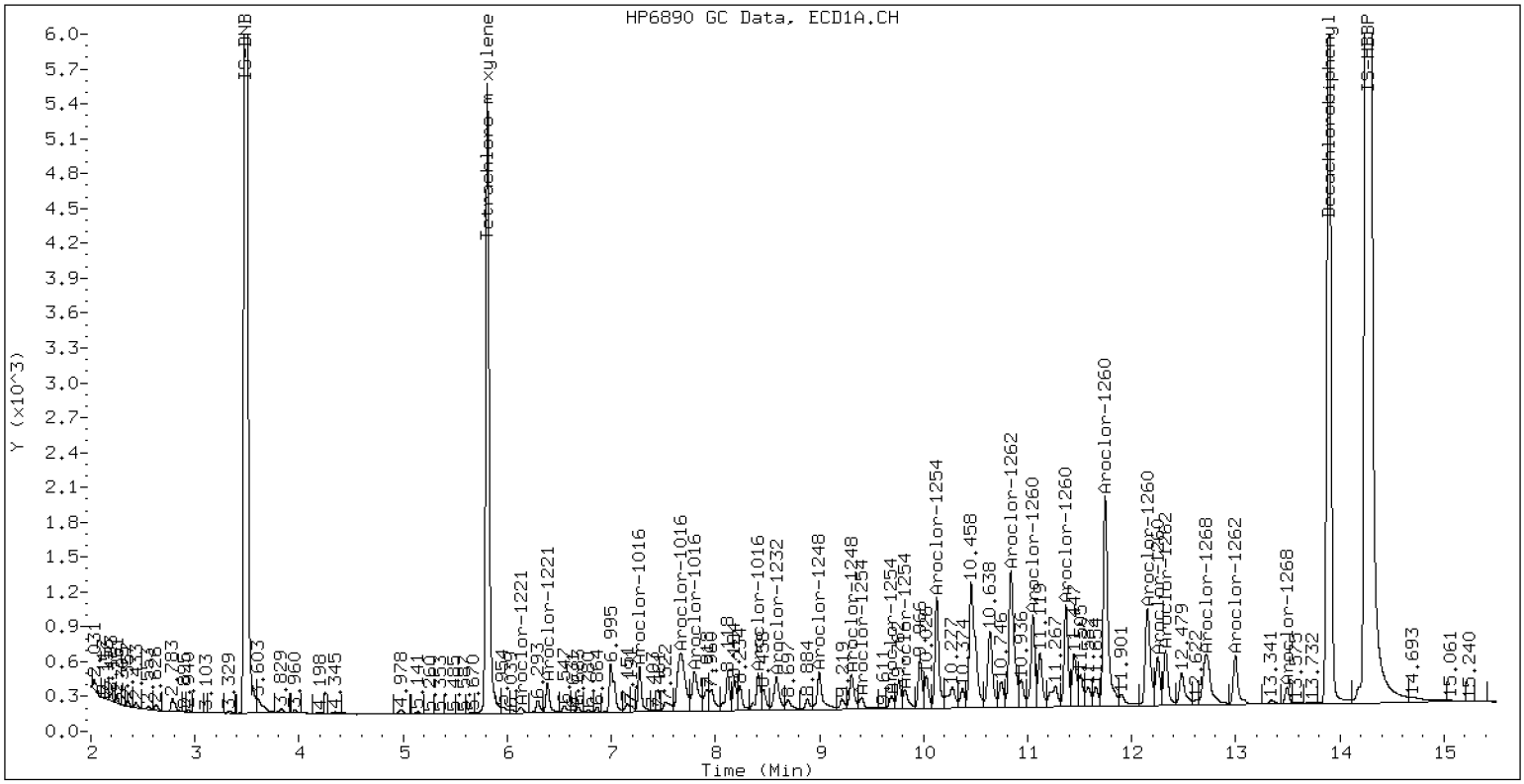
Total PCB Area Col2 (5.795 - 14.023) = 728868 Col2 Total PCB = 0.1 ppm*

* Quantitated against AR1660 0.25ppm in Ical

PCB-Form 10 Mod.

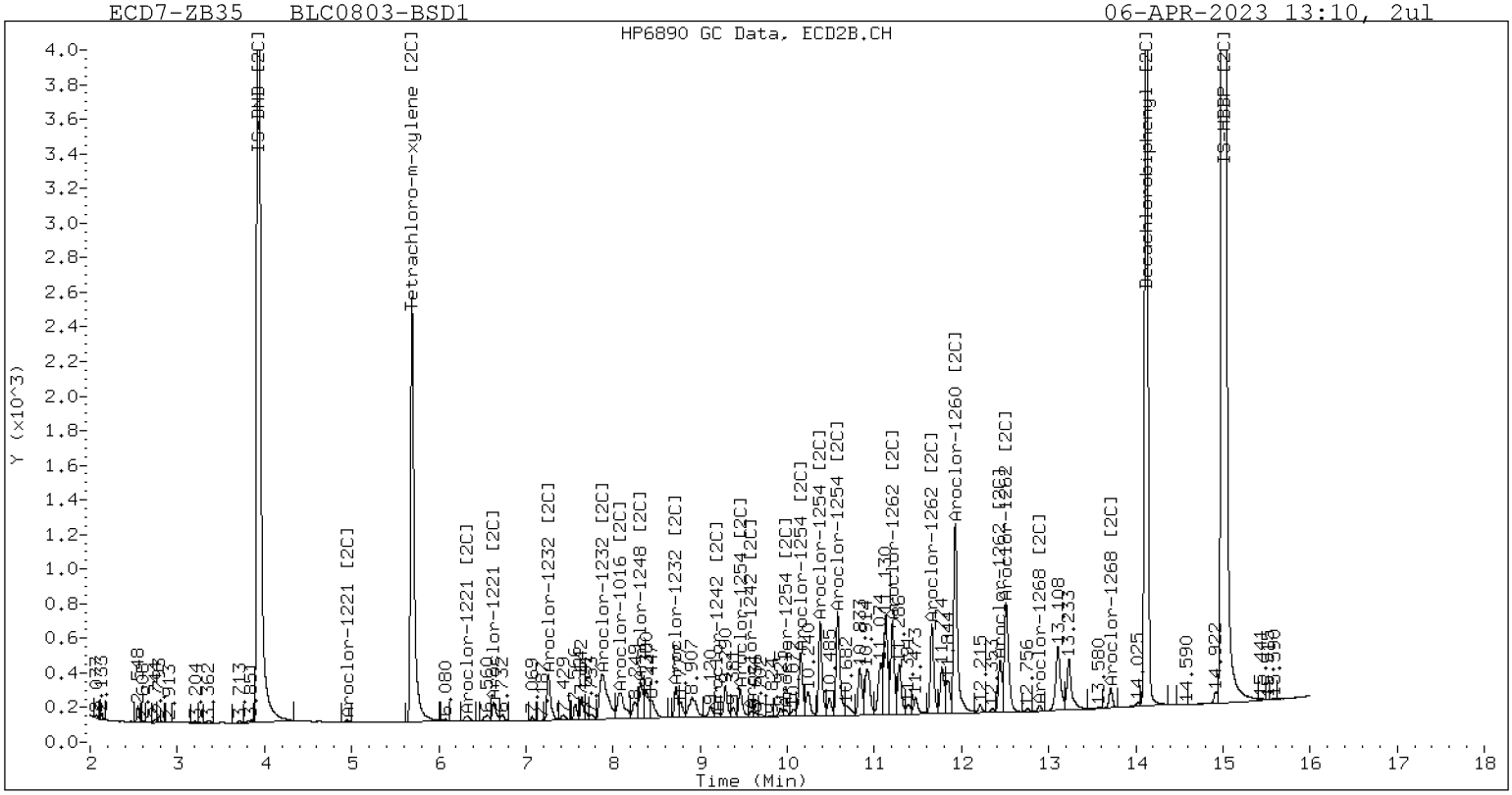
PCB Dual Column Chromatograms

ECD7-ZB5 BLC0803-BSD1 06-APR-2023 13:10, 2ul



ZB-5 Manual Integration: YES

ECD7-ZB35 BLC0803-BSD1 06-APR-2023 13:10, 2ul

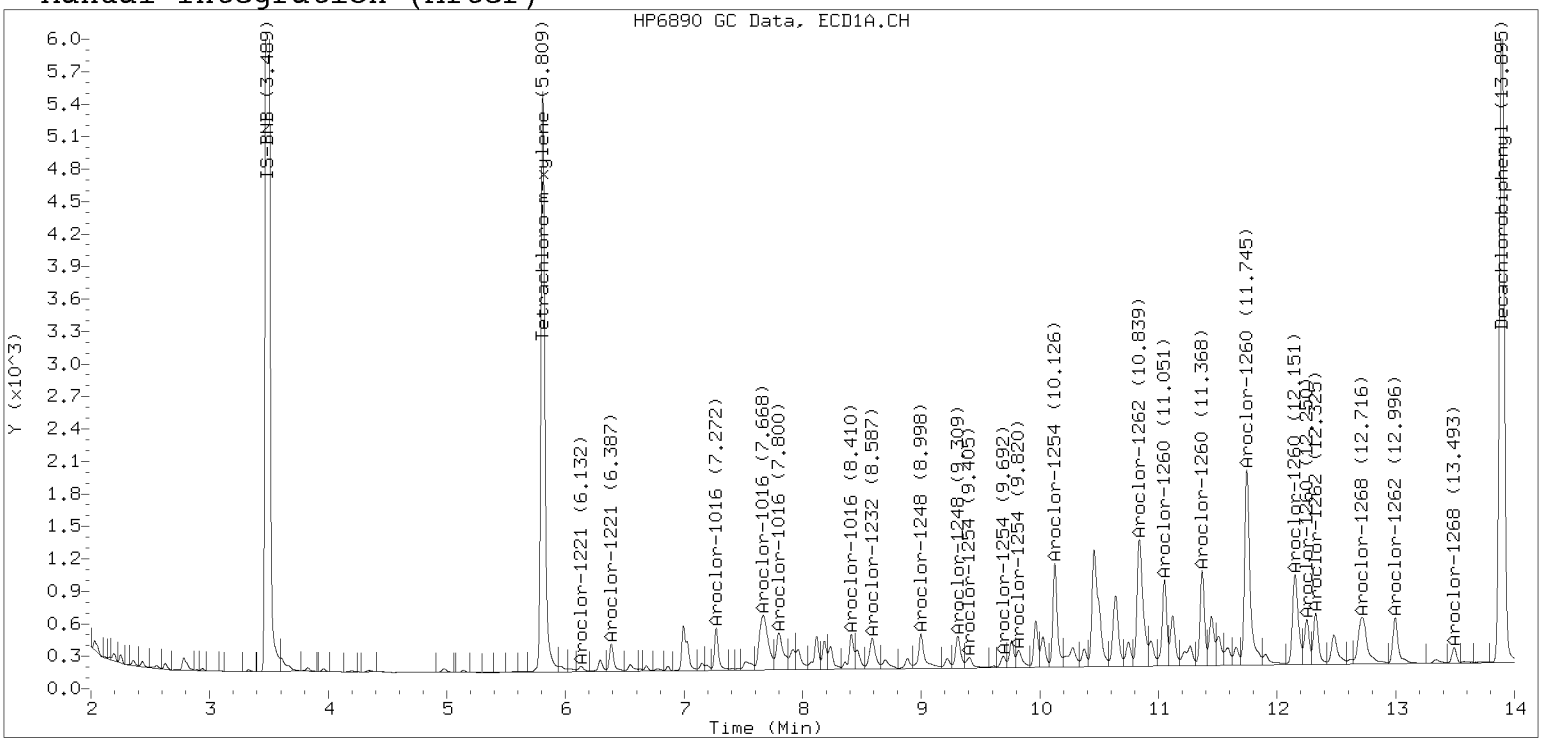


ZB-35 Manual Integration: NO

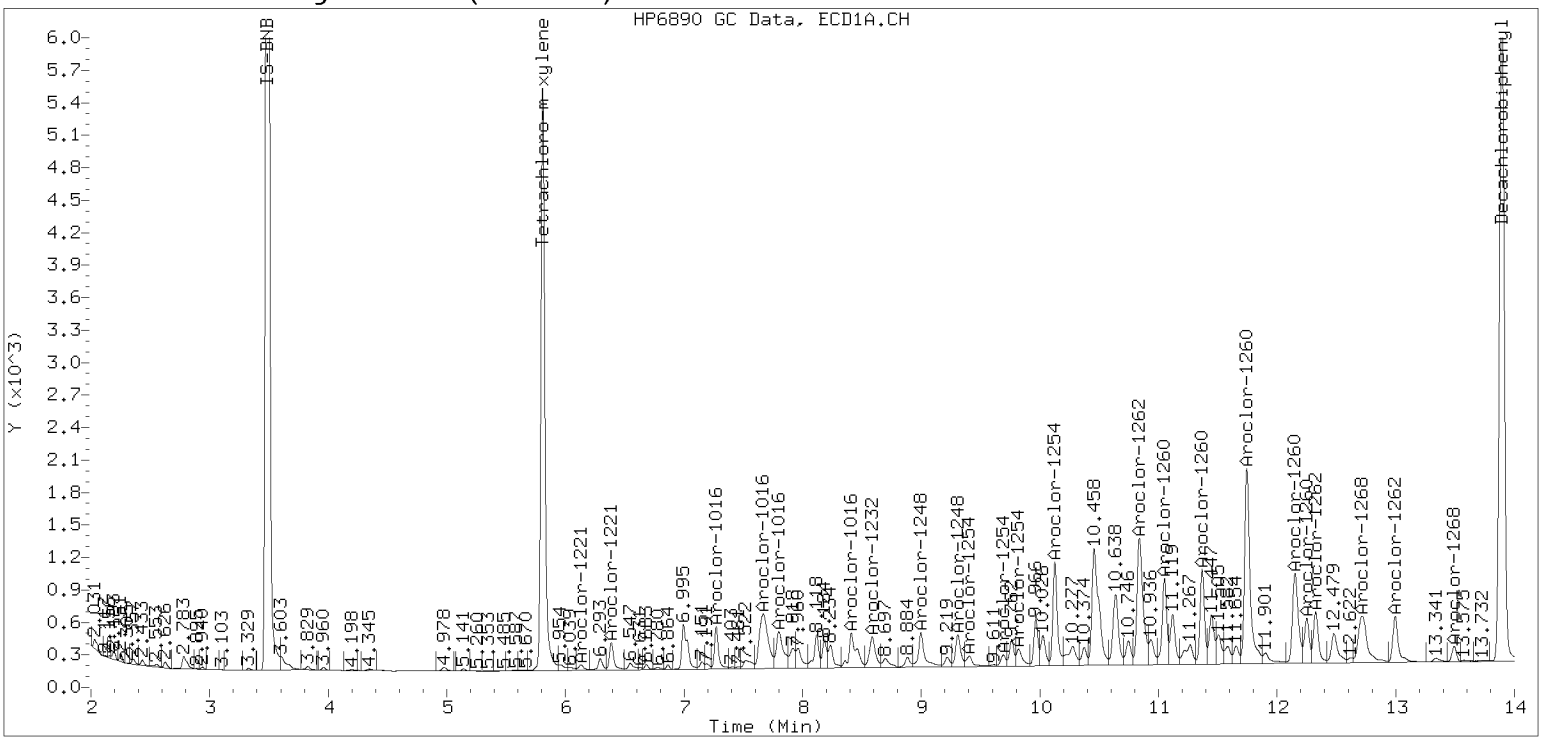
Manual Peak Adjustment, ZB-5

Datafile: ecd7.i/230406.b/04062306ECD7.D Injection Date: 06-APR-2023 13:10

Manual Integration (After)



Processed Integration (Before)



Analytical Resources, LLC
Analytical Chemists and Consultants

INITIAL CALIBRATION DATA
EPA 8082A

Laboratory:	Analytical Resources, LLC	SDG:	23C0692
Client:	HydroGeoLogic, Inc.	Project:	Portland Harbor Superfund Site 2021-2023
Calibration:	GB00069	Instrument:	ECD7
Calibration Date:	02/24/2023	Column (1):	ZB5

Compound	Level 01		Level 02		Level 03		Level 04		Level 05		Level 06	
	Conc	RRF	Conc	RRF	Conc	RRF	Conc	RRF	Conc	RRF	Conc	RRF
Aroclor 1016	250	0.0511017	20	0.0514466	50	5.107478E-02	1000	4.502727E-02	100	5.036259E-02	500	0.0471841
Aroclor-1016 (1)	250	0.031405	20	3.172321E-02	50	3.253176E-02	1000	2.667138E-02	100	3.141686E-02	500	2.856283E-02
Aroclor-1016 (2)	250	9.848704E-02	20	9.239415E-02	50	9.245774E-02	1000	8.848657E-02	100	9.221759E-02	500	0.0917416
Aroclor-1016 (3)	250	4.393471E-02	20	5.165382E-02	50	5.037363E-02	1000	3.720718E-02	100	4.822959E-02	500	3.990906E-02
Aroclor-1016 (4)	250	3.058004E-02	20	3.001523E-02	50	2.893599E-02	1000	2.774395E-02	100	2.958631E-02	500	2.852291E-02
Aroclor 1260	250	4.264611E-02	20	3.933745E-02	50	3.914748E-02	1000	0.0377098	100	3.888069E-02	500	3.753326E-02
Aroclor-1260 (1)	250	3.096387E-02	20	2.926415E-02	50	2.920486E-02	1000	2.746159E-02	100	2.841034E-02	500	2.736642E-02
Aroclor-1260 (2)	250	3.291004E-02	20	2.966791E-02	50	3.006192E-02	1000	2.856573E-02	100	3.010757E-02	500	2.910054E-02
Aroclor-1260 (3)	250	8.575373E-02	20	8.087657E-02	50	8.045158E-02	1000	7.674417E-02	100	7.953737E-02	500	7.514663E-02
Aroclor-1260 (4)	250	4.484933E-02	20	3.904963E-02	50	3.886754E-02	1000	3.922291E-02	100	3.955346E-02	500	3.941669E-02
Aroclor-1260 (5)	250	1.875356E-02	20	1.782901E-02	50	1.715148E-02	1000	1.655457E-02	100	1.679471E-02	500	1.663603E-02
Decachlorobiphenyl	40	0.7880759	3.2	0.8290115	8	0.8055828	160	0.797423	16	0.7758675	80	0.7312517
Tetrachlorometaxylene	40	1.205085	3.2	1.168271	8	1.244015	160	1.241136	16	1.185465	80	1.122954

Analytical Resources, LLC
Analytical Chemists and Consultants

INITIAL CALIBRATION DATA
EPA 8082A

Laboratory:	Analytical Resources, LLC	SDG:	23C0692
Client:	HydroGeoLogic, Inc.	Project:	Portland Harbor Superfund Site 2021-2023
Calibration:	GB00069	Instrument:	ECD7
Calibration Date:	02/24/2023	Column (1):	ZB5

Compound	Level 07		Level 08		Level 09		Level 10		Level 11		Level 12	
	Conc	RRF	Conc	RRF	Conc	RRF	Conc	RRF	Conc	RRF	Conc	RRF
Aroclor 1221							250	1.657582E-02				
Aroclor-1221 (1)							250	7.164712E-03				
Aroclor-1221 (2)							250	0.0128135				
Aroclor-1221 (3)							250	2.974924E-02				
Aroclor 1232									250	1.690391E-02		
Aroclor-1232 (1)									250	4.285984E-03		
Aroclor-1232 (2)									250	8.499602E-03		
Aroclor-1232 (3)									250	3.847671E-02		
Aroclor-1232 (4)									250	1.635336E-02		
Aroclor 1242	250	3.953397E-02										
Aroclor-1242 (1)	250	2.479209E-02										
Aroclor-1242 (2)	250	7.528986E-02										
Aroclor-1242 (3)	250	2.342574E-02										
Aroclor-1242 (4)	250	3.462819E-02										
Aroclor 1248			250	5.747549E-02								
Aroclor-1248 (1)			250	3.903293E-02								
Aroclor-1248 (2)			250	0.0496149								
Aroclor-1248 (3)			250	9.360202E-02								
Aroclor-1248 (4)			250	4.765213E-02								
Aroclor 1254					250	6.629494E-02						
Aroclor-1254 (1)					250	8.033306E-02						
Aroclor-1254 (2)					250	0.0361302						
Aroclor-1254 (3)					250	5.164705E-02						
Aroclor-1254 (4)					250	0.100423						
Aroclor-1254 (5)					250	6.294139E-02						
Aroclor 1262							250	3.665955E-02				
Aroclor-1262 (1)							250	2.454122E-02				
Aroclor-1262 (2)							250	3.993338E-02				

Analytical Resources, LLC
Analytical Chemists and Consultants

INITIAL CALIBRATION DATA
EPA 8082A

Laboratory:	Analytical Resources, LLC	SDG:	23C0692
Client:	HydroGeoLogic, Inc.	Project:	Portland Harbor Superfund Site 2021-2023
Calibration:	GB00069	Instrument:	ECD7
Calibration Date:	02/24/2023	Column (1):	ZB5

Compound	Level 07		Level 08		Level 09		Level 10		Level 11		Level 12	
	Conc	RRF	Conc	RRF	Conc	RRF	Conc	RRF	Conc	RRF	Conc	RRF
Aroclor-1262 (3)							250	4.292945E-02				
Aroclor-1262 (4)							250	3.923413E-02				
Aroclor 1268									250	0.1442124		
Aroclor-1268 (1)									250	0.102504		
Aroclor-1268 (2)									250	0.1015072		
Aroclor-1268 (3)									250	8.685666E-02		
Aroclor-1268 (4)									250	0.2859818		

Analytical Resources, LLC
Analytical Chemists and Consultants

INITIAL CALIBRATION DATA
EPA 8082A

Laboratory:	Analytical Resources, LLC	SDG:	23C0692
Client:	HydroGeoLogic, Inc.	Project:	Portland Harbor Superfund Site 2021-2023
Calibration:	GB00069	Instrument:	ECD7
Calibration Date:	02/24/2023	Column (1):	ZB5

COMPOUND	Mean RRF	RRF RSD	Linear COD	Quad COD	Limit Type & Limit	Q
Aroclor 1016	4.936617E-02	5.3			RSD (20)	
Aroclor-1016 (1)	3.038517E-02	7.4			RSD (20)	
Aroclor-1016 (2)	9.263078E-02	3.5			RSD (20)	
Aroclor-1016 (3)	0.045218	12.9			RSD (20)	
Aroclor-1016 (4)	2.923074E-02	3.5			RSD (20)	
Aroclor 1221		0.0			RSD (20)	
Aroclor-1221 (1)		0.0			RSD (20)	
Aroclor-1221 (2)		0.0			RSD (20)	
Aroclor-1221 (3)		0.0			RSD (20)	
Aroclor 1232		0.0			RSD (20)	
Aroclor-1232 (1)		0.0			RSD (20)	
Aroclor-1232 (2)		0.0			RSD (20)	
Aroclor-1232 (3)		0.0			RSD (20)	
Aroclor-1232 (4)		0.0			RSD (20)	
Aroclor 1242		0.0			RSD (20)	
Aroclor-1242 (1)		0.0			RSD (20)	
Aroclor-1242 (2)		0.0			RSD (20)	
Aroclor-1242 (3)		0.0			RSD (20)	
Aroclor-1242 (4)		0.0			RSD (20)	
Aroclor 1248		0.0			RSD (20)	
Aroclor-1248 (1)		0.0			RSD (20)	
Aroclor-1248 (2)		0.0			RSD (20)	
Aroclor-1248 (3)		0.0			RSD (20)	
Aroclor-1248 (4)		0.0			RSD (20)	
Aroclor 1254		0.0			RSD (20)	
Aroclor-1254 (1)		0.0			RSD (20)	
Aroclor-1254 (2)		0.0			RSD (20)	
Aroclor-1254 (3)		0.0			RSD (20)	
Aroclor-1254 (4)		0.0			RSD (20)	
Aroclor-1254 (5)		0.0			RSD (20)	
Aroclor 1260	3.920913E-02	4.7			RSD (20)	

Analytical Resources, LLC
Analytical Chemists and Consultants

INITIAL CALIBRATION DATA

EPA 8082A

Laboratory:	Analytical Resources, LLC	SDG:	23C0692
Client:	HydroGeoLogic, Inc.	Project:	Portland Harbor Superfund Site 2021-2023
Calibration:	GB00069	Instrument:	ECD7
Calibration Date:	02/24/2023	Column (1):	ZB5

COMPOUND	Mean RRF	RRF RSD	Linear COD	Quad COD	Limit Type & Limit	Q
Aroclor-1260 (1)	2.877854E-02	4.7			RSD (20)	
Aroclor-1260 (2)	3.006895E-02	5.0			RSD (20)	
Aroclor-1260 (3)	7.975167E-02	4.6			RSD (20)	
Aroclor-1260 (4)	4.015993E-02	5.8			RSD (20)	
Aroclor-1260 (5)	1.728656E-02	5.0			RSD (20)	
Aroclor 1262		0.0			RSD (20)	
Aroclor-1262 (1)		0.0			RSD (20)	
Aroclor-1262 (2)		0.0			RSD (20)	
Aroclor-1262 (3)		0.0			RSD (20)	
Aroclor-1262 (4)		0.0			RSD (20)	
Aroclor 1268		0.0			RSD (20)	
Aroclor-1268 (1)		0.0			RSD (20)	
Aroclor-1268 (2)		0.0			RSD (20)	
Aroclor-1268 (3)		0.0			RSD (20)	
Aroclor-1268 (4)		0.0			RSD (20)	
Decachlorobiphenyl	0.7878687	4.2			RSD (20)	
Tetrachlorometaxylene	1.194488	3.9			RSD (20)	

Analytical Resources, LLC
Analytical Chemists and Consultants

INITIAL CALIBRATION DATA
EPA 8082A

Laboratory:	Analytical Resources, LLC	SDG:	23C0692
Client:	HydroGeoLogic, Inc.	Project:	Portland Harbor Superfund Site 2021-2023
Calibration:	GB00069	Instrument:	ECD7
Calibration Date:	02/24/2023	Column (2):	ZB35

Compound	Level 01		Level 02		Level 03		Level 04		Level 05		Level 06	
	Conc	RRF	Conc	RRF	Conc	RRF	Conc	RRF	Conc	RRF	Conc	RRF
Aroclor 1016 [2C]	250	0.0571297	20	5.099991E-02	50	0.0573721	1000	5.075893E-02	100	5.836783E-02	500	5.288542E-02
Aroclor-1016 (1) [2C]	250	4.732763E-02	20	5.070692E-02	50	5.021603E-02	1000	4.080107E-02	100	4.868029E-02	500	4.325569E-02
Aroclor-1016 (2) [2C]	250	0.1025919	20	8.142537E-02	50	9.407053E-02	1000	9.361548E-02	100	0.1015897	500	9.651233E-02
Aroclor-1016 (3) [2C]	250	4.410181E-02	20	4.005508E-02	50	4.718351E-02	1000	3.925581E-02	100	4.613223E-02	500	4.062487E-02
Aroclor-1016 (4) [2C]	250	3.449742E-02	20	3.181228E-02	50	3.801833E-02	1000	0.0293633	100	0.0370691	500	3.114879E-02
Aroclor 1260 [2C]	250	7.266587E-02	20	0.0760446	50	7.181489E-02	1000	0.0636872	100	6.942709E-02	500	6.617305E-02
Aroclor-1260 (1) [2C]	250	4.801376E-02	20	5.286013E-02	50	4.911343E-02	1000	4.201242E-02	100	4.695569E-02	500	4.328842E-02
Aroclor-1260 (2) [2C]	250	0.1266443	20	0.1297611	50	0.1243096	1000	0.1054494	100	0.1209452	500	0.1132043
Aroclor-1260 (3) [2C]	250	3.207621E-02	20	3.524009E-02	50	3.146502E-02	1000	0.0319805	100	2.936945E-02	500	3.102287E-02
Aroclor-1260 (4) [2C]	250	8.392913E-02	20	8.631709E-02	50	8.237154E-02	1000	7.530648E-02	100	0.080438	500	7.717658E-02
Decachlorobiphenyl [2C]	40	1.310398	3.2	1.170661	8	1.20406	160	1.207975	16	1.205489	80	1.211045
Tetrachlorometaxylene [2C]	40	1.219073	3.2	1.21526	8	1.195453	160	1.111394	16	1.175548	80	1.125598

Analytical Resources, LLC
Analytical Chemists and Consultants

INITIAL CALIBRATION DATA
EPA 8082A

Laboratory:	Analytical Resources, LLC	SDG:	23C0692
Client:	HydroGeoLogic, Inc.	Project:	Portland Harbor Superfund Site 2021-2023
Calibration:	GB00069	Instrument:	ECD7
Calibration Date:	02/24/2023	Column (2):	ZB35

Compound	Level 07		Level 08		Level 09		Level 10		Level 11		Level 12	
	Conc	RRF	Conc	RRF	Conc	RRF	Conc	RRF	Conc	RRF	Conc	RRF
Aroclor 1221 [2C]							250	1.507982E-02				
Aroclor-1221 (1) [2C]							250	7.573277E-03				
Aroclor-1221 (2) [2C]							250	0.0143332				
Aroclor-1221 (3) [2C]							250	2.333296E-02				
Aroclor 1232 [2C]									250	1.920227E-02		
Aroclor-1232 (1) [2C]									250	4.09321E-03		
Aroclor-1232 (2) [2C]									250	2.034072E-02		
Aroclor-1232 (3) [2C]									250	4.067023E-02		
Aroclor-1232 (4) [2C]									250	1.170493E-02		
Aroclor 1242 [2C]	250	4.230924E-02										
Aroclor-1242 (1) [2C]	250	3.716893E-02										
Aroclor-1242 (2) [2C]	250	7.813249E-02										
Aroclor-1242 (3) [2C]	250	2.431205E-02										
Aroclor-1242 (4) [2C]	250	0.0296235										
Aroclor 1248 [2C]			250	4.442703E-02								
Aroclor-1248 (1) [2C]			250	3.819713E-02								
Aroclor-1248 (2) [2C]			250	3.949349E-02								
Aroclor-1248 (3) [2C]			250	4.544987E-02								
Aroclor-1248 (4) [2C]			250	5.456762E-02								
Aroclor 1254 [2C]					250	0.0763106						
Aroclor-1254 (1) [2C]					250	6.080523E-02						
Aroclor-1254 (2) [2C]					250	4.891616E-02						
Aroclor-1254 (3) [2C]					250	0.1058376						
Aroclor-1254 (4) [2C]					250	0.103175						
Aroclor-1254 (5) [2C]					250	6.281905E-02						
Aroclor 1262 [2C]							250	7.397596E-02				
Aroclor-1262 (1) [2C]							250	6.830764E-02				
Aroclor-1262 (2) [2C]							250	5.817803E-02				

Analytical Resources, LLC
Analytical Chemists and Consultants

INITIAL CALIBRATION DATA
EPA 8082A

Laboratory:	Analytical Resources, LLC	SDG:	23C0692
Client:	HydroGeoLogic, Inc.	Project:	Portland Harbor Superfund Site 2021-2023
Calibration:	GB00069	Instrument:	ECD7
Calibration Date:	02/24/2023	Column (2):	ZB35

Compound	Level 07		Level 08		Level 09		Level 10		Level 11		Level 12	
	Conc	RRF	Conc	RRF	Conc	RRF	Conc	RRF	Conc	RRF	Conc	RRF
Aroclor-1262 (3) [2C]							250	6.600951E-02				
Aroclor-1262 (4) [2C]							250	0.1034087				
Aroclor 1268 [2C]									250	0.2386862		
Aroclor-1268 (1) [2C]									250	0.1610947		
Aroclor-1268 (2) [2C]									250	0.1731794		
Aroclor-1268 (3) [2C]									250	0.1478672		
Aroclor-1268 (4) [2C]									250	0.4726034		

Analytical Resources, LLC
Analytical Chemists and Consultants

INITIAL CALIBRATION DATA
EPA 8082A

Laboratory:	Analytical Resources, LLC	SDG:	23C0692
Client:	HydroGeoLogic, Inc.	Project:	Portland Harbor Superfund Site 2021-2023
Calibration:	GB00069	Instrument:	ECD7
Calibration Date:	02/24/2023	Column (2):	ZB35

COMPOUND	Mean RRF	RRF RSD	Linear COD	Quad COD	Limit Type & Limit	Q
Aroclor 1016 [2C]	5.458565E-02	6.3			RSD (20)	
Aroclor-1016 (1) [2C]	4.683127E-02	8.5			RSD (20)	
Aroclor-1016 (2) [2C]	9.496755E-02	8.0			RSD (20)	
Aroclor-1016 (3) [2C]	4.289222E-02	7.9			RSD (20)	
Aroclor-1016 (4) [2C]	3.365154E-02	10.3			RSD (20)	
Aroclor 1221 [2C]		0.0			RSD (20)	
Aroclor-1221 (1) [2C]		0.0			RSD (20)	
Aroclor-1221 (2) [2C]		0.0			RSD (20)	
Aroclor-1221 (3) [2C]		0.0			RSD (20)	
Aroclor 1232 [2C]		0.0			RSD (20)	
Aroclor-1232 (1) [2C]		0.0			RSD (20)	
Aroclor-1232 (2) [2C]		0.0			RSD (20)	
Aroclor-1232 (3) [2C]		0.0			RSD (20)	
Aroclor-1232 (4) [2C]		0.0			RSD (20)	
Aroclor 1242 [2C]		0.0			RSD (20)	
Aroclor-1242 (1) [2C]		0.0			RSD (20)	
Aroclor-1242 (2) [2C]		0.0			RSD (20)	
Aroclor-1242 (3) [2C]		0.0			RSD (20)	
Aroclor-1242 (4) [2C]		0.0			RSD (20)	
Aroclor 1248 [2C]		0.0			RSD (20)	
Aroclor-1248 (1) [2C]		0.0			RSD (20)	
Aroclor-1248 (2) [2C]		0.0			RSD (20)	
Aroclor-1248 (3) [2C]		0.0			RSD (20)	
Aroclor-1248 (4) [2C]		0.0			RSD (20)	
Aroclor 1254 [2C]		0.0			RSD (20)	
Aroclor-1254 (1) [2C]		0.0			RSD (20)	
Aroclor-1254 (2) [2C]		0.0			RSD (20)	
Aroclor-1254 (3) [2C]		0.0			RSD (20)	
Aroclor-1254 (4) [2C]		0.0			RSD (20)	
Aroclor-1254 (5) [2C]		0.0			RSD (20)	
Aroclor 1260 [2C]	6.996878E-02	6.4			RSD (20)	

Analytical Resources, LLC
Analytical Chemists and Consultants

INITIAL CALIBRATION DATA
EPA 8082A

Laboratory:	Analytical Resources, LLC	SDG:	23C0692
Client:	HydroGeoLogic, Inc.	Project:	Portland Harbor Superfund Site 2021-2023
Calibration:	GB00069	Instrument:	ECD7
Calibration Date:	02/24/2023	Column (2):	ZB35

COMPOUND	Mean RRF	RRF RSD	Linear COD	Quad COD	Limit Type & Limit	Q
Aroclor-1260 (1) [2C]	4.704064E-02	8.4			RSD (20)	
Aroclor-1260 (2) [2C]	0.1200523	7.6			RSD (20)	
Aroclor-1260 (3) [2C]	3.185902E-02	6.0			RSD (20)	
Aroclor-1260 (4) [2C]	8.092314E-02	5.1			RSD (20)	
Aroclor 1262 [2C]		0.0			RSD (20)	
Aroclor-1262 (1) [2C]		0.0			RSD (20)	
Aroclor-1262 (2) [2C]		0.0			RSD (20)	
Aroclor-1262 (3) [2C]		0.0			RSD (20)	
Aroclor-1262 (4) [2C]		0.0			RSD (20)	
Aroclor 1268 [2C]		0.0			RSD (20)	
Aroclor-1268 (1) [2C]		0.0			RSD (20)	
Aroclor-1268 (2) [2C]		0.0			RSD (20)	
Aroclor-1268 (3) [2C]		0.0			RSD (20)	
Aroclor-1268 (4) [2C]		0.0			RSD (20)	
Decachlorobiphenyl [2C]	1.218271	3.9			RSD (20)	
Tetrachlorometaxylene [2C]	1.173721	3.9			RSD (20)	

Analytical Resources, LLC
Analytical Chemists and Consultants

ANALYSIS SEQUENCE

SLB0342

Instrument: ECD7
Calibration ID: GB00069

Printed: 2/28/2023 9:54:44AM

Lab Number	Analysis	Container	Order	Position	STD ID	ISTD ID	Client	Comments
SLB0342-CAL1	QC		1		L000856	L000844		
SLB0342-CAL2	QC		2		L000859	L000844		
SLB0342-CAL3	QC		3		L000858	L000844		
SLB0342-CAL4	QC		4		L000731	L000844		
SLB0342-CAL5	QC		5		L000857	L000844		
SLB0342-CAL6	QC		6		L000855	L000844		
SLB0342-CAL7	QC		7		L000860	L000844		
SLB0342-CAL8	QC		8		L000861	L000844		
SLB0342-CAL9	QC		9		L000862	L000844		
SLB0342-CALA	QC		10		L000863	L000844		
SLB0342-CALB	QC		11		L000864	L000844		
SLB0342-SCV1	QC		12		L002065	L000844		
SLB0342-SCV2	QC		13		K007656	L000844		
SLB0342-SCV3	QC		14		L002066	L000844		
SLB0342-SCV4	QC		15		L002067	L000844		
SLB0342-SCV5	QC		16		L002068	L000844		
SLB0342-SCV6	QC		17		L002069	L000844		

Samples Loaded By Date

Data Processed By Date

GC LOG SUMMARY FOR DATABATCH - \\target\share\chem4\ecd7.i\230224.b

	Inject Date/Time	Filename	DF	LabID	ClientID
1	24-FEB-2023 10:51	02242301ECD7.D	1	IB	
2	24-FEB-2023 11:12	02242302ECD7.D	1	0.25PPMAR1660	
3	24-FEB-2023 11:33	02242303ECD7.D	1	0.02PPMAR1660	
4	24-FEB-2023 11:54	02242304ECD7.D	1	0.05PPMAR1660	
5	24-FEB-2023 12:15	02242305ECD7.D	1	1.0PPMAR1660	
6	24-FEB-2023 12:36	02242306ECD7.D	1	0.1PPMAR1660	
7	24-FEB-2023 12:57	02242307ECD7.D	1	0.5PPMAR1660	
8	24-FEB-2023 13:18	02242308ECD7.D	1	0.25PPMAR1242	
9	24-FEB-2023 13:39	02242309ECD7.D	1	0.25PPMAR1248	
10	24-FEB-2023 14:00	02242310ECD7.D	1	0.25PPMAR1254	
11	24-FEB-2023 14:21	02242311ECD7.D	1	0.25PPMAR2162	
12	24-FEB-2023 14:42	02242312ECD7.D	1	0.25PPMAR3268	
13	24-FEB-2023 15:03	02242313ECD7.D	1	AR1660SCV	
14	24-FEB-2023 15:24	02242314ECD7.D	1	AR1242SCV	
15	24-FEB-2023 15:45	02242315ECD7.D	1	AR1248SCV	
16	24-FEB-2023 16:06	02242316ECD7.D	1	AR1254SCV	
17	24-FEB-2023 16:27	02242317ECD7.D	1	AR2162SCV	
18	24-FEB-2023 16:48	02242318ECD7.D	1	AR3268SCV	
19	24-FEB-2023 17:09	02242319ECD7.D	1	DDTS	
20	24-FEB-2023 17:30	02242320ECD7.D	1	DDT BD	

MANUAL INTEGRATION SUMMARY FOR DATABATCH - \\target\share\chem4\ecd7.i\230224.b

ARI Job No.: IB Method: PCB.m Instrument: ecd7.i Date: 24-FEB-2023

Time	Filename	LabID	ClientId	DF	Manually Integrated Compounds
1051	02242301ECD7.D	IB		1	NO MANUAL INTEGRATION
1112	02242302ECD7.D	0.25PPMAR1660		1	NO MANUAL INTEGRATION
1133	02242303ECD7.D	0.02PPMAR1660		1	NO MANUAL INTEGRATION
1154	02242304ECD7.D	0.05PPMAR1660		1	NO MANUAL INTEGRATION
1215	02242305ECD7.D	1.0PPMAR1660		1	NO MANUAL INTEGRATION
1236	02242306ECD7.D	0.1PPMAR1660		1	NO MANUAL INTEGRATION
1257	02242307ECD7.D	0.5PPMAR1660		1	NO MANUAL INTEGRATION
1318	02242308ECD7.D	0.25PPMAR1242		1	NO MANUAL INTEGRATION
1339	02242309ECD7.D	0.25PPMAR1248		1	NO MANUAL INTEGRATION
1400	02242310ECD7.D	0.25PPMAR1254		1	NO MANUAL INTEGRATION
1421	02242311ECD7.D	0.25PPMAR2162		1	NO MANUAL INTEGRATION
1442	02242312ECD7.D	0.25PPMAR3268		1	NO MANUAL INTEGRATION
1503	02242313ECD7.D	AR1660SCV		1	NO MANUAL INTEGRATION
1524	02242314ECD7.D	AR1242SCV		1	NO MANUAL INTEGRATION
1545	02242315ECD7.D	AR1248SCV		1	NO MANUAL INTEGRATION
1606	02242316ECD7.D	AR1254SCV		1	NO MANUAL INTEGRATION
1627	02242317ECD7.D	AR2162SCV		1	NO MANUAL INTEGRATION

MANUAL INTEGRATION SUMMARY FOR DATABATCH - \\target\share\chem4\ecd7.i\230224.b

Time	Filename	LabID	ClientId	DF	Manually Integrated Compounds
1648	02242318ECD7.D	AR3268SCV		1	NO MANUAL INTEGRATION
1709	02242319ECD7.D	DDTS		1	NO MANUAL INTEGRATION
1730	02242320ECD7.D	DDT BD		1	NO MANUAL INTEGRATION
1751	02242321ECD7.D			1	NO MANUAL INTEGRATION
1812	02242322ECD7.D			1	NO MANUAL INTEGRATION
1833	02242323ECD7.D			1	NO MANUAL INTEGRATION
1854	02242324ECD7.D			1	NO MANUAL INTEGRATION
1915	02242325ECD7.D			1	NO MANUAL INTEGRATION
1936	02242326ECD7.D			1	NO MANUAL INTEGRATION
1957	02242327ECD7.D			1	NO MANUAL INTEGRATION
2018	02242328ECD7.D			1	NO MANUAL INTEGRATION
2039	02242329ECD7.D			1	NO MANUAL INTEGRATION
2059	02242330ECD7.D			1	NO MANUAL INTEGRATION
2120	02242331ECD7.D			1	NO MANUAL INTEGRATION
2141	02242332ECD7.D			1	NO MANUAL INTEGRATION
2202	02242333ECD7.D			1	NO MANUAL INTEGRATION
2223	02242334ECD7.D			1	NO MANUAL INTEGRATION
2244	02242335ECD7.D			1	NO MANUAL INTEGRATION

MANUAL INTEGRATION SUMMARY FOR DATABATCH - \\target\share\chem4\ecd7.i\230224.b

Time	Filename	LabID	ClientId	DF	Manually Integrated Compounds
2305	02242336ECD7.D			1	NO MANUAL INTEGRATION
2326	02242337ECD7.D			1	NO MANUAL INTEGRATION
2347	02242338ECD7.D			1	NO MANUAL INTEGRATION
0008	02242339ECD7.D			1	NO MANUAL INTEGRATION
0029	02242340ECD7.D			1	NO MANUAL INTEGRATION
0050	02242341ECD7.D			1	NO MANUAL INTEGRATION
0111	02242342ECD7.D			1	NO MANUAL INTEGRATION
0132	02242343ECD7.D			1	NO MANUAL INTEGRATION
0153	02242344ECD7.D			1	NO MANUAL INTEGRATION
0214	02242345ECD7.D			1	NO MANUAL INTEGRATION
0235	02242346ECD7.D			1	NO MANUAL INTEGRATION
0256	02242347ECD7.D			1	NO MANUAL INTEGRATION
0317	02242348ECD7.D			1	NO MANUAL INTEGRATION
0338	02242349ECD7.D			1	NO MANUAL INTEGRATION
0359	02242350ECD7.D			1	NO MANUAL INTEGRATION
0420	02242351ECD7.D			1	NO MANUAL INTEGRATION
0441	02242352ECD7.D			1	NO MANUAL INTEGRATION
0502	02242353ECD7.D			1	NO MANUAL INTEGRATION

MANUAL INTEGRATION SUMMARY FOR DATABATCH - \\target\share\chem4\ecd7.i\230224.b

Time	Filename	LabID	ClientId	DF	Manually Integrated Compounds
0523	02242354ECD7.D			1	NO MANUAL INTEGRATION
0544	02242355ECD7.D			1	NO MANUAL INTEGRATION
0605	02242356ECD7.D			1	NO MANUAL INTEGRATION
0626	02242357ECD7.D			1	NO MANUAL INTEGRATION
0647	02242358ECD7.D			1	NO MANUAL INTEGRATION
0708	02242359ECD7.D			1	NO MANUAL INTEGRATION
0729	02242360ECD7.D			1	NO MANUAL INTEGRATION
0750	02242361ECD7.D			1	NO MANUAL INTEGRATION
0811	02242362ECD7.D			1	NO MANUAL INTEGRATION
0832	02242363ECD7.D			1	NO MANUAL INTEGRATION
0853	02242364ECD7.D			1	NO MANUAL INTEGRATION
0914	02242365ECD7.D			1	NO MANUAL INTEGRATION
0935	02242366ECD7.D			1	NO MANUAL INTEGRATION
0956	02242367ECD7.D			1	NO MANUAL INTEGRATION
1017	02242368ECD7.D			1	NO MANUAL INTEGRATION
1038	02242369ECD7.D			1	NO MANUAL INTEGRATION
1059	02242370ECD7.D			1	NO MANUAL INTEGRATION
1120	02242371ECD7.D			1	NO MANUAL INTEGRATION

MANUAL INTEGRATION SUMMARY FOR DATABATCH - \\target\share\chem4\ecd7.i\230224.b

Time	Filename	LabID	ClientId	DF	Manually Integrated Compounds
1141	02242372ECD7.D			1	NO MANUAL INTEGRATION
1202	02242373ECD7.D			1	NO MANUAL INTEGRATION
1223	02242374ECD7.D			1	NO MANUAL INTEGRATION
1244	02242375ECD7.D			1	NO MANUAL INTEGRATION
1305	02242376ECD7.D			1	NO MANUAL INTEGRATION
1326	02242377ECD7.D			1	NO MANUAL INTEGRATION
1347	02242378ECD7.D			1	NO MANUAL INTEGRATION
1408	02242379ECD7.D			1	NO MANUAL INTEGRATION
1429	02242380ECD7.D			1	NO MANUAL INTEGRATION
1450	02242381ECD7.D			1	NO MANUAL INTEGRATION
1511	02242382ECD7.D			1	NO MANUAL INTEGRATION
1532	02242383ECD7.D			1	NO MANUAL INTEGRATION
1553	02242384ECD7.D			1	NO MANUAL INTEGRATION
1051	02242301ECD7.D	IB		1	NO MANUAL INTEGRATION
1112	02242302ECD7.D	0.25PPMAR1660		1	NO MANUAL INTEGRATION
1133	02242303ECD7.D	0.02PPMAR1660		1	Aroclor-1016 [2C],
1154	02242304ECD7.D	0.05PPMAR1660		1	NO MANUAL INTEGRATION
1215	02242305ECD7.D	1.0PPMAR1660		1	NO MANUAL INTEGRATION

MANUAL INTEGRATION SUMMARY FOR DATABATCH - \\target\share\chem4\ecd7.i\230224.b\230224.b

Time	Filename	LabID	ClientId	DF	Manually Integrated Compounds
1236	02242306ECD7.D	0.1PPMAR1660		1	NO MANUAL INTEGRATION
1257	02242307ECD7.D	0.5PPMAR1660		1	NO MANUAL INTEGRATION
1318	02242308ECD7.D	0.25PPMAR1242		1	NO MANUAL INTEGRATION
1339	02242309ECD7.D	0.25PPMAR1248		1	NO MANUAL INTEGRATION
1400	02242310ECD7.D	0.25PPMAR1254		1	NO MANUAL INTEGRATION
1421	02242311ECD7.D	0.25PPMAR2162		1	NO MANUAL INTEGRATION
1442	02242312ECD7.D	0.25PPMAR3268		1	NO MANUAL INTEGRATION
1503	02242313ECD7.D	AR1660SCV		1	NO MANUAL INTEGRATION
1524	02242314ECD7.D	AR1242SCV		1	NO MANUAL INTEGRATION
1545	02242315ECD7.D	AR1248SCV		1	NO MANUAL INTEGRATION
1606	02242316ECD7.D	AR1254SCV		1	NO MANUAL INTEGRATION
1627	02242317ECD7.D	AR2162SCV		1	NO MANUAL INTEGRATION
1648	02242318ECD7.D	AR3268SCV		1	NO MANUAL INTEGRATION
1709	02242319ECD7.D	DDTS		1	NO MANUAL INTEGRATION
1730	02242320ECD7.D	DDT BD		1	NO MANUAL INTEGRATION
1751	02242321ECD7.D			1	NO MANUAL INTEGRATION
1812	02242322ECD7.D			1	NO MANUAL INTEGRATION
1833	02242323ECD7.D			1	NO MANUAL INTEGRATION

MANUAL INTEGRATION SUMMARY FOR DATABATCH - \\target\share\chem4\ecd7.i\230224.b\230224.b

Time	Filename	LabID	ClientId	DF	Manually Integrated Compounds
1854	02242324ECD7.D			1	NO MANUAL INTEGRATION
1915	02242325ECD7.D			1	NO MANUAL INTEGRATION
1936	02242326ECD7.D			1	NO MANUAL INTEGRATION
1957	02242327ECD7.D			1	NO MANUAL INTEGRATION
2018	02242328ECD7.D			1	NO MANUAL INTEGRATION
2038	02242329ECD7.D			1	NO MANUAL INTEGRATION
2059	02242330ECD7.D			1	NO MANUAL INTEGRATION
2120	02242331ECD7.D			1	NO MANUAL INTEGRATION
2141	02242332ECD7.D			1	NO MANUAL INTEGRATION
2202	02242333ECD7.D			1	NO MANUAL INTEGRATION
2223	02242334ECD7.D			1	NO MANUAL INTEGRATION
2244	02242335ECD7.D			1	NO MANUAL INTEGRATION
2305	02242336ECD7.D			1	NO MANUAL INTEGRATION
2326	02242337ECD7.D			1	NO MANUAL INTEGRATION
2347	02242338ECD7.D			1	NO MANUAL INTEGRATION
0008	02242339ECD7.D			1	NO MANUAL INTEGRATION
0029	02242340ECD7.D			1	NO MANUAL INTEGRATION
0050	02242341ECD7.D			1	NO MANUAL INTEGRATION

MANUAL INTEGRATION SUMMARY FOR DATABATCH - \\target\share\chem4\ecd7.i\230224.b\230224.b

Time	Filename	LabID	ClientId	DF	Manually Integrated Compounds
0111	02242342ECD7.D			1	NO MANUAL INTEGRATION
0132	02242343ECD7.D			1	NO MANUAL INTEGRATION
0153	02242344ECD7.D			1	NO MANUAL INTEGRATION
0214	02242345ECD7.D			1	NO MANUAL INTEGRATION
0235	02242346ECD7.D			1	NO MANUAL INTEGRATION
0256	02242347ECD7.D			1	NO MANUAL INTEGRATION
0317	02242348ECD7.D			1	NO MANUAL INTEGRATION
0338	02242349ECD7.D			1	NO MANUAL INTEGRATION
0359	02242350ECD7.D			1	NO MANUAL INTEGRATION
0420	02242351ECD7.D			1	NO MANUAL INTEGRATION
0441	02242352ECD7.D			1	NO MANUAL INTEGRATION
0502	02242353ECD7.D			1	NO MANUAL INTEGRATION
0523	02242354ECD7.D			1	NO MANUAL INTEGRATION
0544	02242355ECD7.D			1	NO MANUAL INTEGRATION
0605	02242356ECD7.D			1	NO MANUAL INTEGRATION
0626	02242357ECD7.D			1	NO MANUAL INTEGRATION
0647	02242358ECD7.D			1	NO MANUAL INTEGRATION
0708	02242359ECD7.D			1	NO MANUAL INTEGRATION

MANUAL INTEGRATION SUMMARY FOR DATABATCH - \\target\share\chem4\ecd7.i\230224.b\230224.b

Time	Filename	LabID	ClientId	DF	Manually Integrated Compounds
0729	02242360ECD7.D			1	NO MANUAL INTEGRATION
0750	02242361ECD7.D			1	NO MANUAL INTEGRATION
0811	02242362ECD7.D			1	NO MANUAL INTEGRATION
0832	02242363ECD7.D			1	NO MANUAL INTEGRATION
0853	02242364ECD7.D			1	NO MANUAL INTEGRATION
0914	02242365ECD7.D			1	NO MANUAL INTEGRATION
0935	02242366ECD7.D			1	NO MANUAL INTEGRATION
0956	02242367ECD7.D			1	NO MANUAL INTEGRATION
1017	02242368ECD7.D			1	NO MANUAL INTEGRATION
1038	02242369ECD7.D			1	NO MANUAL INTEGRATION
1059	02242370ECD7.D			1	NO MANUAL INTEGRATION
1120	02242371ECD7.D			1	NO MANUAL INTEGRATION
1141	02242372ECD7.D			1	NO MANUAL INTEGRATION
1202	02242373ECD7.D			1	NO MANUAL INTEGRATION
1223	02242374ECD7.D			1	NO MANUAL INTEGRATION
1244	02242375ECD7.D			1	NO MANUAL INTEGRATION
1305	02242376ECD7.D			1	NO MANUAL INTEGRATION
1326	02242377ECD7.D			1	NO MANUAL INTEGRATION

MANUAL INTEGRATION SUMMARY FOR DATABATCH - \\target\share\chem4\ecd7.i\230224.b\230224.b

Time	Filename	LabID	ClientId	DF	Manually Integrated Compounds
1347	02242378ECD7.D			1	NO MANUAL INTEGRATION
1408	02242379ECD7.D			1	NO MANUAL INTEGRATION
1429	02242380ECD7.D			1	NO MANUAL INTEGRATION
1450	02242381ECD7.D			1	NO MANUAL INTEGRATION
1511	02242382ECD7.D			1	NO MANUAL INTEGRATION
1532	02242383ECD7.D			1	NO MANUAL INTEGRATION
1553	02242384ECD7.D			1	NO MANUAL INTEGRATION

Security Status Report

Date: 28-Feb-2023 09:27

02242301ECD7.D	Data Locked	richardl, 28-Feb-2023 09:27
02242302ECD7.D	Data Locked	richardl, 28-Feb-2023 09:27
02242303ECD7.D	Data Locked	richardl, 28-Feb-2023 09:27
02242304ECD7.D	Data Locked	richardl, 28-Feb-2023 09:27
02242305ECD7.D	Data Locked	richardl, 28-Feb-2023 09:27
02242306ECD7.D	Data Locked	richardl, 28-Feb-2023 09:27
02242307ECD7.D	Data Locked	richardl, 28-Feb-2023 09:27
02242308ECD7.D	Data Locked	richardl, 28-Feb-2023 09:27
02242309ECD7.D	Data Locked	richardl, 28-Feb-2023 09:27
02242310ECD7.D	Data Locked	richardl, 28-Feb-2023 09:27
02242311ECD7.D	Data Locked	richardl, 28-Feb-2023 09:27
02242312ECD7.D	Data Locked	richardl, 28-Feb-2023 09:27
02242313ECD7.D	Data Locked	richardl, 28-Feb-2023 09:27
02242314ECD7.D	Data Locked	richardl, 28-Feb-2023 09:27
02242315ECD7.D	Data Locked	richardl, 28-Feb-2023 09:27
02242316ECD7.D	Data Locked	richardl, 28-Feb-2023 09:27
02242317ECD7.D	Data Locked	richardl, 28-Feb-2023 09:27
02242318ECD7.D	Data Locked	richardl, 28-Feb-2023 09:27
02242319ECD7.D	Data Locked	richardl, 28-Feb-2023 09:27
02242320ECD7.D	Data Locked	richardl, 28-Feb-2023 09:27

ARI Labs, Inc.

INITIAL CALIBRATION DATA

Start Cal Date : 24-FEB-2023 11:12
End Cal Date : 24-FEB-2023 14:42
Quant Method : ISTD
Origin : Disabled
Target Version : 4.14
Integrator : HP Genie
Method file : \\target\share\chem4\ecd7.i\230224.b\PCB.m
Last Edit : 24-Feb-2023 15:31 richardl
Curve Type : Average

Calibration File Names:
Level 1: \\target\share\chem4\ecd7.i\230224.b\02242303ECD7.D
Level 2: \\target\share\chem4\ecd7.i\230224.b\02242304ECD7.D
Level 3: \\target\share\chem4\ecd7.i\230224.b\02242306ECD7.D
Level 4: \\target\share\chem4\ecd7.i\230224.b\02242302ECD7.D
Level 5: \\target\share\chem4\ecd7.i\230224.b\02242307ECD7.D
Level 6: \\target\share\chem4\ecd7.i\230224.b\02242305ECD7.D
Level 7: \\target\share\chem4\ecd7.i\230224.b\02242312ECD7.D

Compound	20.000 Level 1	50.000 Level 2	100.000 Level 3	250.000 Level 4	500.000 Level 5	1000.000 Level 6	250.000 Level 7	___ RRF	% RSD
2 Aroclor-1221(1)	#####	#####	#####	#####	#####	#####			
	0.00716							0.00716	0.000
(2)	#####	#####	#####	#####	#####	#####			
	0.01281							0.01281	0.000
(3)	#####	#####	#####	#####	#####	#####			
	0.02975							0.02975	0.000
3 Aroclor-1242(1)	#####	#####	#####	#####	#####	#####			
	0.02479							0.02479	0.000
(2)	#####	#####	#####	#####	#####	#####			
	0.07529							0.07529	0.000
(3)	#####	#####	#####	#####	#####	#####			
	0.02343							0.02343	0.000
(4)	#####	#####	#####	#####	#####	#####			
	0.03463							0.03463	0.000
4 Aroclor-1232(1)	#####	#####	#####	#####	#####	#####			
	0.00429							0.00429	0.000

ARI Labs, Inc.

INITIAL CALIBRATION DATA

Start Cal Date : 24-FEB-2023 11:12
End Cal Date : 24-FEB-2023 14:42
Quant Method : ISTD
Origin : Disabled
Target Version : 4.14
Integrator : HP Genie
Method file : \\target\share\chem4\ecd7.i\230224.b\PCB.m
Last Edit : 24-Feb-2023 15:31 richardl
Curve Type : Average

Compound	20.000 Level 1	50.000 Level 2	100.000 Level 3	250.000 Level 4	500.000 Level 5	1000.000 Level 6	250.000 Level 7	___ RRF	% RSD
(2)	*****	*****	*****	*****	*****	*****			
	0.00850							0.00850	0.000
(3)	*****	*****	*****	*****	*****	*****			
	0.03848							0.03848	0.000
(4)	*****	*****	*****	*****	*****	*****			
	0.01635							0.01635	0.000
7 Aroclor-1016(1)	0.03172	0.03253	0.03142	0.03141	0.02856	0.02667			
	*****							0.03039	7.449
(2)	0.09239	0.09246	0.09222	0.09849	0.09174	0.08849			
	*****							0.09263	3.499
(3)	0.05165	0.05037	0.04823	0.04393	0.03991	0.03721			
	*****							0.04522	12.936
(4)	0.03002	0.02894	0.02959	0.03058	0.02852	0.02774			
	*****							0.02923	3.542
6 Aroclor-1248(1)	*****	*****	*****	*****	*****	*****			
	0.03903							0.03903	0.000
(2)	*****	*****	*****	*****	*****	*****			
	0.04961							0.04961	0.000
(3)	*****	*****	*****	*****	*****	*****			
	0.09360							0.09360	0.000
(4)	*****	*****	*****	*****	*****	*****			
	0.04765							0.04765	0.000

ARI Labs, Inc.

INITIAL CALIBRATION DATA

Start Cal Date : 24-FEB-2023 11:12
End Cal Date : 24-FEB-2023 14:42
Quant Method : ISTD
Origin : Disabled
Target Version : 4.14
Integrator : HP Genie
Method file : \\target\share\chem4\ecd7.i\230224.b\PCB.m
Last Edit : 24-Feb-2023 15:31 richardl
Curve Type : Average

Compound	20.000 Level 1	50.000 Level 2	100.000 Level 3	250.000 Level 4	500.000 Level 5	1000.000 Level 6	250.000 Level 7	___ RRF	% RSD
8 Aroclor-1254(1)	++++++	++++++	++++++	++++++	++++++	++++++	0.08033	0.08033	0.000
(2)	++++++	++++++	++++++	++++++	++++++	++++++	0.03613	0.03613	0.000
(3)	++++++	++++++	++++++	++++++	++++++	++++++	0.05165	0.05165	0.000
(4)	++++++	++++++	++++++	++++++	++++++	++++++	0.10042	0.10042	0.000
(5)	++++++	++++++	++++++	++++++	++++++	++++++	0.06294	0.06294	0.000
9 Aroclor-1260(1)	0.02926	0.02920	0.02841	0.03096	0.02737	0.02746	++++++	0.02878	4.677
(2)	0.02967	0.03006	0.03011	0.03291	0.02910	0.02857	++++++	0.03007	5.029
(3)	0.08088	0.08045	0.07954	0.08575	0.07515	0.07674	++++++	0.07975	4.627
(4)	0.03905	0.03887	0.03955	0.04485	0.03942	0.03922	++++++	0.04016	5.753
(5)	0.01783	0.01715	0.01679	0.01875	0.01664	0.01655	++++++	0.01729	4.953
10 Aroclor-1262(1)	++++++	++++++	++++++	++++++	++++++	++++++	0.02454	0.02454	0.000

ARI Labs, Inc.

INITIAL CALIBRATION DATA

Start Cal Date : 24-FEB-2023 11:12
End Cal Date : 24-FEB-2023 14:42
Quant Method : ISTD
Origin : Disabled
Target Version : 4.14
Integrator : HP Genie
Method file : \\target\share\chem4\ecd7.i\230224.b\PCB.m
Last Edit : 24-Feb-2023 15:31 richardl
Curve Type : Average

Compound	20.000 Level 1	50.000 Level 2	100.000 Level 3	250.000 Level 4	500.000 Level 5	1000.000 Level 6	250.000 Level 7	___ RRF	% RSD
(2)	++++++	++++++	++++++	++++++	++++++	++++++			
	0.03993							0.03993	0.000
(3)	++++++	++++++	++++++	++++++	++++++	++++++			
	0.04293							0.04293	0.000
(4)	++++++	++++++	++++++	++++++	++++++	++++++			
	0.03923							0.03923	0.000
11 Aroclor-1268(1)	++++++	++++++	++++++	++++++	++++++	++++++			
	0.10250							0.10250	0.000
(2)	++++++	++++++	++++++	++++++	++++++	++++++			
	0.10151							0.10151	0.000
(3)	++++++	++++++	++++++	++++++	++++++	++++++			
	0.08686							0.08686	0.000
(4)	++++++	++++++	++++++	++++++	++++++	++++++			
	0.28598							0.28598	0.000
42 2,4-DDE	++++++	++++++	++++++	++++++	++++++	++++++			
	++++++							++++++	++++++
43 2,4-DDD	++++++	++++++	++++++	++++++	++++++	++++++			
	++++++							++++++	++++++
44 2,4-DDT	++++++	++++++	++++++	++++++	++++++	++++++			
	++++++							++++++	++++++
46 4,4-DDE	++++++	++++++	++++++	++++++	++++++	++++++			
	++++++							++++++	++++++

ARI Labs, Inc.

INITIAL CALIBRATION DATA

Start Cal Date : 24-FEB-2023 11:12
End Cal Date : 24-FEB-2023 14:42
Quant Method : ISTD
Origin : Disabled
Target Version : 4.14
Integrator : HP Genie
Method file : \\target\share\chem4\ecd7.i\230224.b\PCB.m
Last Edit : 24-Feb-2023 15:31 richardl
Curve Type : Average

Compound	20.000 Level 1	50.000 Level 2	100.000 Level 3	250.000 Level 4	500.000 Level 5	1000.000 Level 6	250.000 Level 7	___ RRF	% RSD
47 4,4-DDD	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++
48 4,4-DDT	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++
49 Hexachlorobutadiene	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++
50 Hexachlorobenzene	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++
$ 1 Tetrachloro-m-xylene	1.16827	1.24402	1.18546	1.20509	1.12295	1.24114	+++++	1.19449	3.860
$ 13 Decachlorobiphenyl	0.82901	0.80558	0.77587	0.78808	0.73125	0.79742	+++++	0.78787	4.189

ARI Labs, Inc.

INITIAL CALIBRATION DATA

Start Cal Date : 24-FEB-2023 11:12
End Cal Date : 24-FEB-2023 14:42
Quant Method : ISTD
Origin : Disabled
Target Version : 4.14
Integrator : HP Genie
Method file : \\target\share\chem4\ecd7.i\230224.b\PCB.m\PCB2.m
Last Edit : 24-Feb-2023 15:29 richardl
Curve Type : Average

Calibration File Names:
Level 1: \\target\share\chem4\ecd7.i\230224.b\230224.b\02242303ECD7.D
Level 2: \\target\share\chem4\ecd7.i\230224.b\230224.b\02242304ECD7.D
Level 3: \\target\share\chem4\ecd7.i\230224.b\230224.b\02242306ECD7.D
Level 4: \\target\share\chem4\ecd7.i\230224.b\230224.b\02242302ECD7.D
Level 5: \\target\share\chem4\ecd7.i\230224.b\230224.b\02242307ECD7.D
Level 6: \\target\share\chem4\ecd7.i\230224.b\230224.b\02242305ECD7.D
Level 7: \\target\share\chem4\ecd7.i\230224.b\230224.b\02242312ECD7.D

Compound	20.000 Level 1	50.000 Level 2	100.000 Level 3	250.000 Level 4	500.000 Level 5	1000.000 Level 6	250.000 Level 7	___ RRF	% RSD
1 Aroclor-1221 [2C](1)	+++++	+++++	+++++	+++++	+++++	+++++			
	0.00757							0.00757	0.000
(2)	+++++	+++++	+++++	+++++	+++++	+++++			
	0.01433							0.01433	0.000
(3)	+++++	+++++	+++++	+++++	+++++	+++++			
	0.02333							0.02333	0.000
4 Aroclor-1232 [2C](1)	+++++	+++++	+++++	+++++	+++++	+++++			
	0.00409							0.00409	0.000
(2)	+++++	+++++	+++++	+++++	+++++	+++++			
	0.02034							0.02034	0.000
(3)	+++++	+++++	+++++	+++++	+++++	+++++			
	0.04067							0.04067	0.000
(4)	+++++	+++++	+++++	+++++	+++++	+++++			
	0.01170							0.01170	0.000
3 Aroclor-1242 [2C](1)	+++++	+++++	+++++	+++++	+++++	+++++			
	0.03717							0.03717	0.000

ARI Labs, Inc.

INITIAL CALIBRATION DATA

Start Cal Date : 24-FEB-2023 11:12
End Cal Date : 24-FEB-2023 14:42
Quant Method : ISTD
Origin : Disabled
Target Version : 4.14
Integrator : HP Genie
Method file : \\target\share\chem4\ecd7.i\230224.b\PCB.m\PCB2.m
Last Edit : 24-Feb-2023 15:29 richardl
Curve Type : Average

Compound	20.000 Level 1	50.000 Level 2	100.000 Level 3	250.000 Level 4	500.000 Level 5	1000.000 Level 6	250.000 Level 7	___ RRF	% RSD
(2)	+++++	+++++	+++++	+++++	+++++	+++++			
	0.07813							0.07813	0.000
(3)	+++++	+++++	+++++	+++++	+++++	+++++			
	0.02431							0.02431	0.000
(4)	+++++	+++++	+++++	+++++	+++++	+++++			
	0.02962							0.02962	0.000
6 Aroclor-1248 [2C](1)	+++++	+++++	+++++	+++++	+++++	+++++			
	0.03820							0.03820	0.000
(2)	+++++	+++++	+++++	+++++	+++++	+++++			
	0.03949							0.03949	0.000
(3)	+++++	+++++	+++++	+++++	+++++	+++++			
	0.04545							0.04545	0.000
(4)	+++++	+++++	+++++	+++++	+++++	+++++			
	0.05457							0.05457	0.000
7 Aroclor-1016 [2C](1)	0.05071	0.05022	0.04868	0.04733	0.04326	0.04080			
	+++++							0.04683	8.503
(2)	0.08143	0.09407	0.10159	0.10259	0.09651	0.09362			
	+++++							0.09497	8.025
(3)	0.04006	0.04718	0.04613	0.04410	0.04062	0.03926			
	+++++							0.04289	7.857
(4)	0.03181	0.03802	0.03707	0.03450	0.03115	0.02936			
	+++++							0.03365	10.251

ARI Labs, Inc.

INITIAL CALIBRATION DATA

Start Cal Date : 24-FEB-2023 11:12
End Cal Date : 24-FEB-2023 14:42
Quant Method : ISTD
Origin : Disabled
Target Version : 4.14
Integrator : HP Genie
Method file : \\target\share\chem4\ecd7.i\230224.b\PCB.m\PCB2.m
Last Edit : 24-Feb-2023 15:29 richardl
Curve Type : Average

Compound	20.000 Level 1	50.000 Level 2	100.000 Level 3	250.000 Level 4	500.000 Level 5	1000.000 Level 6	250.000 Level 7	___ RRF	% RSD
8 Aroclor-1254 [2C](1)	#####	#####	#####	#####	#####	#####	0.06081	0.06081	0.000
(2)	#####	#####	#####	#####	#####	#####	0.04892	0.04892	0.000
(3)	#####	#####	#####	#####	#####	#####	0.10584	0.10584	0.000
(4)	#####	#####	#####	#####	#####	#####	0.10317	0.10317	0.000
(5)	#####	#####	#####	#####	#####	#####	0.06282	0.06282	0.000
10 Aroclor-1262 [2C](1)	#####	#####	#####	#####	#####	#####	0.06831	0.06831	0.000
(2)	#####	#####	#####	#####	#####	#####	0.05818	0.05818	0.000
(3)	#####	#####	#####	#####	#####	#####	0.06601	0.06601	0.000
(4)	#####	#####	#####	#####	#####	#####	0.10341	0.10341	0.000
9 Aroclor-1260 [2C](1)	0.05286	0.04911	0.04696	0.04801	0.04329	0.04201	#####	0.04704	8.422
(2)	0.12976	0.12431	0.12095	0.12664	0.11320	0.10545	#####	0.12005	7.605

ARI Labs, Inc.

INITIAL CALIBRATION DATA

Start Cal Date : 24-FEB-2023 11:12
End Cal Date : 24-FEB-2023 14:42
Quant Method : ISTD
Origin : Disabled
Target Version : 4.14
Integrator : HP Genie
Method file : \\target\share\chem4\ecd7.i\230224.b\PCB.m\PCB2.m
Last Edit : 24-Feb-2023 15:29 richardl
Curve Type : Average

Compound	20.000 Level 1	50.000 Level 2	100.000 Level 3	250.000 Level 4	500.000 Level 5	1000.000 Level 6	250.000 Level 7	___ RRF	% RSD
(3)	0.03524	0.03147	0.02937	0.03208	0.03102	0.03198	#####	0.03186	6.045
(4)	0.08632	0.08237	0.08044	0.08393	0.07718	0.07531	#####	0.08092	5.126
11 Aroclor-1268 [2C](1)	#####	#####	#####	#####	#####	#####	0.16109	0.16109	0.000
(2)	#####	#####	#####	#####	#####	#####	0.17318	0.17318	0.000
(3)	#####	#####	#####	#####	#####	#####	0.14787	0.14787	0.000
(4)	#####	#####	#####	#####	#####	#####	0.47260	0.47260	0.000
41 2,4-DDE [2C]	#####	#####	#####	#####	#####	#####	#####	#####	#####
42 2,4-DDD [2C]	#####	#####	#####	#####	#####	#####	#####	#####	#####
44 4,4-DDE [2C]	#####	#####	#####	#####	#####	#####	#####	#####	#####
45 4,4-DDD/2,4-DDT [2C]	#####	#####	#####	#####	#####	#####	#####	#####	#####
46 4,4-DDT [2C]	#####	#####	#####	#####	#####	#####	#####	#####	#####

ARI Labs, Inc.

INITIAL CALIBRATION DATA

Start Cal Date : 24-FEB-2023 11:12
End Cal Date : 24-FEB-2023 14:42
Quant Method : ISTD
Origin : Disabled
Target Version : 4.14
Integrator : HP Genie
Method file : \\target\share\chem4\ecd7.i\230224.b\PCB.m\PCB2.m
Last Edit : 24-Feb-2023 15:29 richardl
Curve Type : Average

Compound	20.000 Level 1	50.000 Level 2	100.000 Level 3	250.000 Level 4	500.000 Level 5	1000.000 Level 6	250.000 Level 7	___ RRF	% RSD
48 Hexachlorobutadiene	+++++ +++++	+++++	+++++	+++++	+++++	+++++		+++++	+++++
49 Hexachlorobenzene	+++++ +++++	+++++	+++++	+++++	+++++	+++++		+++++	+++++
$ 2 Tetrachloro-m-xylene [2C]	1.21526 +++++	1.19545	1.17555	1.21907	1.12560	1.11139		1.17372	3.897
$ 13 Decachlorobiphenyl [2C]	1.17066 +++++	1.20406	1.20549	1.31040	1.21104	1.20797		1.21827	3.898

ARI Labs, Inc.
RETENTION TIME SUMMARY REPORT

Method File: \\target\share\chem4\ecd7.i\230224.b\PCB.m
Batch File: \\target\share\chem4\ecd7.i\230224.b
Inst ID: ecd7.i

ID:	RT01	RT02	RT03	RT04	RT05	RT06
FILENAME:	02242302ECD7	02242303ECD7	02242304ECD7	02242305ECD7	02242306ECD7	02242307ECD7
INJ.DATE:	24-FEB-2023	24-FEB-2023	24-FEB-2023	24-FEB-2023	24-FEB-2023	24-FEB-2023
INJ.TIME:	11:12	11:33	11:54	12:15	12:36	12:57

Compound	RT01	RT02	RT03	RT04	RT05	RT06	EXPEC RT	RT WINDOW	AVG RT	STD DEV
* 41 IS-BNB	3.493	3.492	3.492	3.492	3.491	3.491	3.493	3.393-3.593	3.492	0.001
$ 1 Tetrachloro-m-xylene	5.811	5.809	5.809	5.813	5.809	5.810	5.811	5.711-5.911	5.810	0.002
2 Aroclor-1221	+++++	+++++	+++++	+++++	+++++	+++++	4.732	4.632-4.832	+++++	+++++
3 Aroclor-1242	+++++	+++++	+++++	+++++	+++++	+++++	7.269	7.169-7.369	+++++	+++++
4 Aroclor-1232	+++++	+++++	+++++	+++++	+++++	+++++	4.732	4.632-4.832	+++++	+++++
7 Aroclor-1016	7.272	7.272	7.272	7.270	7.271	7.270	7.272	7.172-7.372	7.271	0.001
6 Aroclor-1248	+++++	+++++	+++++	+++++	+++++	+++++	8.403	8.303-8.503	+++++	+++++
8 Aroclor-1254	+++++	+++++	+++++	+++++	+++++	+++++	9.295	9.195-9.395	+++++	+++++
9 Aroclor-1260	11.046	11.047	11.046	11.044	11.045	11.044	11.046	10.946-11.146	11.045	0.001
10 Aroclor-1262	+++++	+++++	+++++	+++++	+++++	+++++	10.824	10.724-10.924	+++++	+++++
11 Aroclor-1268	+++++	+++++	+++++	+++++	+++++	+++++	12.243	12.143-12.343	+++++	+++++
$ 13 Decachlorobiphenyl	13.897	13.893	13.893	13.899	13.892	13.898	13.897	13.797-13.997	13.895	0.003
* 12 IS-HBBP	14.269	14.268	14.268	14.267	14.268	14.268	14.269	14.169-14.369	14.268	0.001
42 2,4-DDE	+++++	+++++	+++++	+++++	+++++	+++++	9.260	9.210-9.310	+++++	+++++
43 2,4-DDD	+++++	+++++	+++++	+++++	+++++	+++++	9.801	9.751-9.851	+++++	+++++
44 2,4-DDT	+++++	+++++	+++++	+++++	+++++	+++++	10.293	10.243-10.343	+++++	+++++
46 4,4-DDE	+++++	+++++	+++++	+++++	+++++	+++++	9.683	9.583-9.783	+++++	+++++

Reviewer 1 _____ Date: _____
Reviewer 2 _____ Date: _____

ARI Labs, Inc.
RETENTION TIME SUMMARY REPORT

Method File: \\target\share\chem4\ecd7.i\230224.b\PCB.m
Batch File: \\target\share\chem4\ecd7.i\230224.b
Inst ID: ecd7.i

Compound	RT01	RT02	RT03	RT04	RT05	RT06	EXPEC RT	RT WINDOW	AVG RT	STD DEV
47 4,4-DDD	+++++	+++++	+++++	+++++	+++++	+++++	10.254	10.154-10.354	+++++	+++++
48 4,4-DDT	+++++	+++++	+++++	+++++	+++++	+++++	10.754	10.654-10.854	+++++	+++++
49 Hexachlorobutadiene	+++++	+++++	+++++	+++++	+++++	+++++	1.842	1.742-1.942	+++++	+++++
50 Hexachlorobenzene	+++++	+++++	+++++	+++++	+++++	+++++	6.708	6.608-6.808	+++++	+++++

ARI Labs, Inc.
RETENTION TIME SUMMARY REPORT

Method File: \\target\share\chem4\ecd7.i\230224.b\PCB.m\PCB2.m
Batch File: \\target\share\chem4\ecd7.i\230224.b\230224.b
Inst ID: ecd7.i

ID:	RT01	RT02	RT03	RT04	RT05	RT06
FILENAME:	02242302ECD7	02242303ECD7	02242304ECD7	02242305ECD7	02242306ECD7	02242307ECD7
INJ.DATE:	24-FEB-2023	24-FEB-2023	24-FEB-2023	24-FEB-2023	24-FEB-2023	24-FEB-2023
INJ.TIME:	11:12	11:33	11:54	12:15	12:36	12:57

Compound	RT01	RT02	RT03	RT04	RT05	RT06	EXPEC RT	RT WINDOW	AVG RT	STD DEV
* 40 IS-BNB [2C]	3.928	3.929	3.929	3.929	3.928	3.929	3.928	3.828-4.028	3.929	0.000
$ 2 Tetrachloro-m-xylene [	5.687	5.688	5.688	5.688	5.688	5.688	5.687	5.587-5.787	5.688	0.001
1 Aroclor-1221 [2C]	+++++	+++++	+++++	+++++	+++++	+++++	4.958	4.858-5.058	+++++	+++++
4 Aroclor-1232 [2C]	+++++	+++++	+++++	+++++	+++++	+++++	4.958	4.859-5.059	+++++	+++++
3 Aroclor-1242 [2C]	+++++	+++++	+++++	+++++	+++++	+++++	7.254	7.154-7.354	+++++	+++++
6 Aroclor-1248 [2C]	+++++	+++++	+++++	+++++	+++++	+++++	8.305	8.205-8.405	+++++	+++++
7 Aroclor-1016 [2C]	7.255	7.256	7.256	7.254	7.255	7.256	7.255	7.155-7.355	7.255	0.001
8 Aroclor-1254 [2C]	+++++	+++++	+++++	+++++	+++++	+++++	9.447	9.347-9.547	+++++	+++++
10 Aroclor-1262 [2C]	+++++	+++++	+++++	+++++	+++++	+++++	11.198	11.098-11.298	+++++	+++++
9 Aroclor-1260 [2C]	11.653	11.656	11.655	11.652	11.655	11.653	11.653	11.553-11.753	11.654	0.001
11 Aroclor-1268 [2C]	+++++	+++++	+++++	+++++	+++++	+++++	12.431	12.331-12.531	+++++	+++++
$ 13 Decachlorobiphenyl [2C	14.120	14.120	14.119	14.122	14.119	14.120	14.120	14.020-14.220	14.120	0.001
* 12 IS-HBBP [2C]	15.008	15.008	15.008	15.008	15.007	15.008	15.008	14.908-15.108	15.008	0.000
41 2,4-DDE [2C]	+++++	+++++	+++++	+++++	+++++	+++++	9.911	9.861-9.961	+++++	+++++
42 2,4-DDD [2C]	+++++	+++++	+++++	+++++	+++++	+++++	9.536	9.486-9.586	+++++	+++++
44 4,4-DDE [2C]	+++++	+++++	+++++	+++++	+++++	+++++	10.209	10.109-10.309	+++++	+++++
45 4,4-DDD/2,4-DDT [2C]	+++++	+++++	+++++	+++++	+++++	+++++	10.667	10.567-10.767	+++++	+++++

Reviewer 1 _____ Date:_____
Reviewer 2 _____ Date:_____

ARI Labs, Inc.
RETENTION TIME SUMMARY REPORT

Method File: \\target\share\chem4\ecd7.i\230224.b\PCB.m\PCB2.m
Batch File: \\target\share\chem4\ecd7.i\230224.b\230224.b
Inst ID: ecd7.i

Compound	RT01	RT02	RT03	RT04	RT05	RT06	EXPEC RT	RT WINDOW	AVG RT	STD DEV
46 4,4-DDT [2C]	+++++	+++++	+++++	+++++	+++++	+++++	11.092	10.992-11.192	+++++	+++++
48 Hexachlorobutadiene	+++++	+++++	+++++	+++++	+++++	+++++	1.703	1.603-1.803	+++++	+++++
49 Hexachlorobenzene	+++++	+++++	+++++	+++++	+++++	+++++	7.178	7.078-7.278	+++++	+++++

Analytical Resources Inc.
Dual Column 608/8082 PCB Quantitation Report

Data file 1: /230224.b/02242301ECD7.D
Data file 2: /230224.b/230224.b/02242301ECD7.D
Method: \\target\share\chem4\ecd7.i\230224.b\PCB.m
Compound Sublist: PCB.sub
Instrument, Inj. Vol.: ecd7.i, 2ul
Quant Method: Internal Std

ARI ID: IB
Client ID:
Injection Date: 24-FEB-2023 10:51
Report Date: 02/28/2023 09:50
Matrix: NONE
Dilution Factor: 1.0

SURROGATES

ZB5 Col RT	ZB5 Col Shift	ZB5 Col Response	ZB35 Col RT	ZB35 Col Shift	ZB35 Col Response	ZB5 on col	ZB35 on col	RPD	Compound/Flag
5.826	0.019	382217	5.683	-0.002	180378	33.8	36.5	7.7	Tetrachloro-m-xylene
13.904	0.011	534110	14.120	0.001	295605	35.3	37.2	5.2	Decachlorobiphenyl

* Indicates RPD > 40%

INTERNAL STANDARD SUMMARY

Column 1

Standard Cpnd	Standard Area*	Sample Area	%D
Bromo-Nitrobenzene	673778	756896	12.3
Hexabromobiphenyl	1429847	1534275	7.3

Column 2

Standard Cpnd	Standard Area*	Sample Area	%D
Bromo-Nitrobenzene	315256	336543	6.8
Hexabromobiphenyl	513946	521508	1.5

* Standard Areas taken from Initial Cal Level 3
Initial Calibration Date: 24-FEB-2023
<- Indicates standard response outside Limits (-50 to +100%)

	ZB5 Col					ZB35 Col				
Aroclor	Peak#	RT	Shift	Area	Amount	Peak#	RT	Shift	Area	Amount
Aroclor-1016	1	---			0.0	1	---			0.0
Aroclor-1016	2	---			0.0	2	---			0.0
Aroclor-1016	3	---			0.0	3	---			0.0
Aroclor-1016	4	---			0.0	4	---			0.0
	Col1Ave: <3 Quant Peaks					Col2Ave: <3 Quant Peaks				
Aroclor-1221	1	---			0.0	1	---			0.0
Aroclor-1221	2	---			0.0	2	6.321	0.025	1873	31.1
Aroclor-1221	3	---			0.0	3	6.633	0.012	314	3.2
	Col1Ave: <3 Quant Peaks					Col2Ave: <3 Quant Peaks				
Aroclor-1232	1	---			0.0	1	---			0.0
Aroclor-1232	2	---			0.0	2	---			0.0
Aroclor-1232	3	7.698	0.043	2193	6.0	3	---			0.0
Aroclor-1232	4	8.505	-0.076	11525	74.5	4	---			0.0
	Col1Ave: <3 Quant Peaks					Col2Ave: <3 Quant Peaks				
Aroclor-1242	1	---			0.0	1	---			0.0
Aroclor-1242	2	7.698	0.042	2193	3.1	2	---			0.0
Aroclor-1242	3	---			0.0	3	---			0.0
Aroclor-1242	4	8.505	-0.074	11525	35.2	4	---			0.0
	Col1Ave: <3 Quant Peaks					Col2Ave: <3 Quant Peaks				
Aroclor-1248	1	---			0.0	1	---			0.0
Aroclor-1248	2	---			0.0	2	---			0.0
Aroclor-1248	3	---			0.0	3	---			0.0
Aroclor-1248	4	---			0.0	4	---			0.0
	Col1Ave: <3 Quant Peaks					Col2Ave: <3 Quant Peaks				
Aroclor-1254	1	---			0.0	1	---			0.0
Aroclor-1254	2	---			0.0	2	---			0.0
Aroclor-1254	3	9.596	-0.072	31424	64.3	3	---			0.0
Aroclor-1254	4	---			0.0	4	---			0.0
Aroclor-1254	5	10.167	-0.010	18361	30.8	5	---			0.0
	Col1Ave: <3 Quant Peaks					Col2Ave: <3 Quant Peaks				
Aroclor-1260	1	11.098	0.054	6994	12.7	1	---			0.0
Aroclor-1260	2	---			0.0	2	---			0.0
Aroclor-1260	3	11.706	-0.027	7806	5.1	3	---			0.0
Aroclor-1260	4	---			0.0	4	---			0.0
Aroclor-1260	5	---			0.0	NS	---			----
	Col1Ave: <3 Quant Peaks					Col2Ave: <3 Quant Peaks				
Aroclor-1262	1	10.824	-0.005	16873	35.8	1	---			0.0
Aroclor-1262	2	---			0.0	2	---			0.0
Aroclor-1262	3	---			0.0	3	---			0.0
Aroclor-1262	4	13.040	0.053	14031	18.6	4	---			0.0
	Col1Ave: <3 Quant Peaks					Col2Ave: <3 Quant Peaks				
Aroclor-1268	1	---			0.0	1	---			0.0
Aroclor-1268	2	---			0.0	2	---			0.0
Aroclor-1268	3	12.709	0.009	6037	3.6	3	12.891	-0.001	659	0.7
Aroclor-1268	4	13.499	0.010	12396	2.3	4	13.710	0.001	1848	0.6
	Col1Ave: <3 Quant Peaks					Col2Ave: <3 Quant Peaks				

Total PCB Area Col1 (5.906 - 13.793) = 260205 Col1 Total PCB = 0.0 ppm*

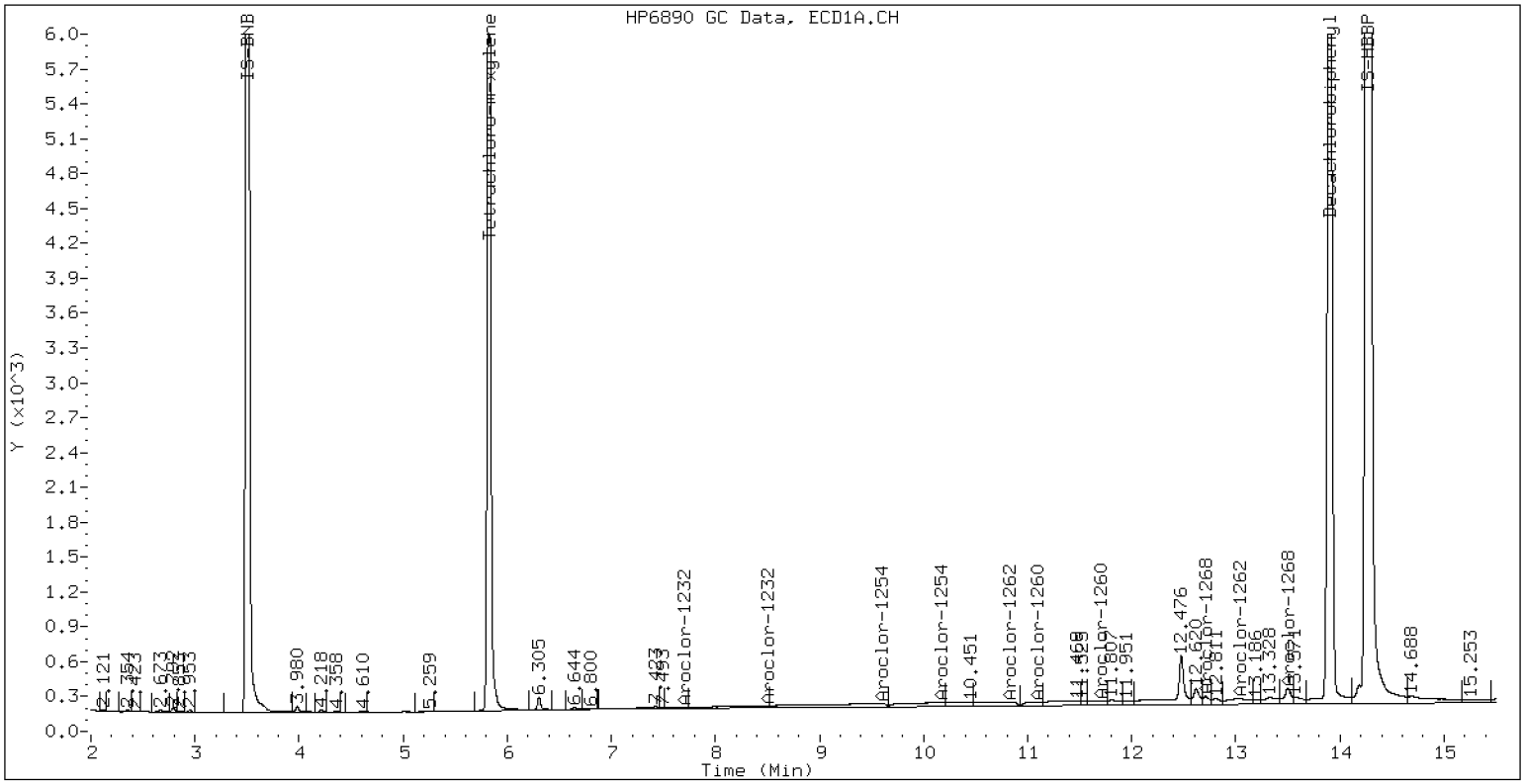
Total PCB Area Col2 (5.785 - 14.019) = 18252 Col2 Total PCB = 0.0 ppm*

* Quantitated against AR1660 0.25ppm in Ical

PCB-Form 10 Mod.

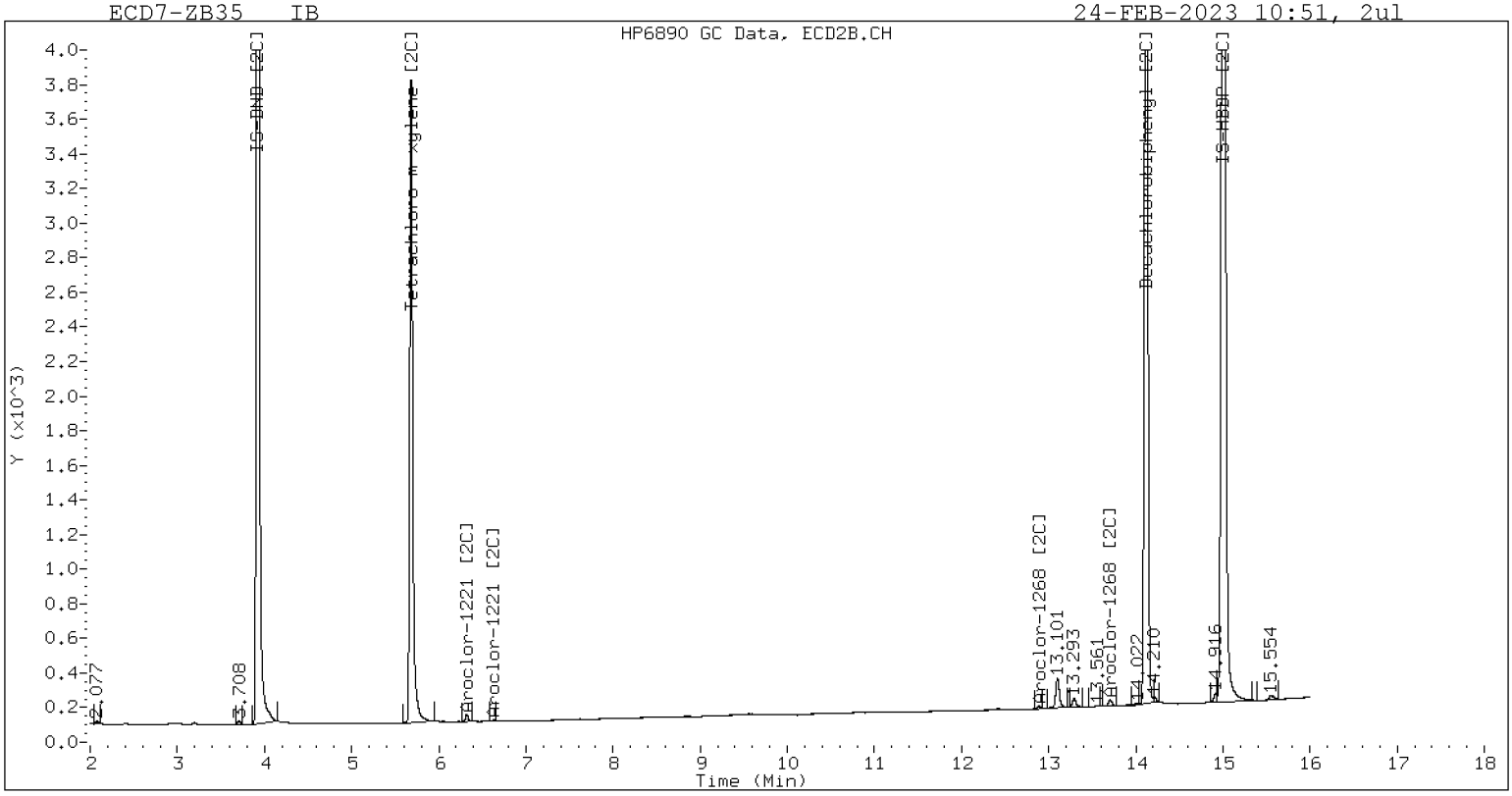
PCB Dual Column Chromatograms

ECD7-ZB5 IB 24-FEB-2023 10:51, 2ul



ZB-5 Manual Integration: NO

ECD7-ZB35 IB 24-FEB-2023 10:51, 2ul



ZB-35 Manual Integration: NO

Analytical Resources Inc.
Dual Column 608/8082 PCB Quantitation Report

Data file 1: /230224.b/02242302ECD7.D
Data file 2: /230224.b/230224.b/02242302ECD7.D
Method: \\target\share\chem4\ecd7.i\230224.b\PCB.m
Compound Sublist: AR1660.sub
Instrument, Inj. Vol.: ecd7.i, 2ul
Quant Method: Internal Std

ARI ID: 0.25PPMAR1660
Client ID:
Injection Date: 24-FEB-2023 11:12
Report Date: 02/28/2023 09:50
Matrix: NONE
Dilution Factor: 1.0

SURROGATES

ZB5 Col RT	ZB5 Col Shift	ZB5 Col Response	ZB35 Col RT	ZB35 Col Shift	ZB35 Col Response	ZB5 on col	ZB35 on col	RPD	Compound/Flag
5.811	0.005	405980	5.687	0.002	192160	40.4	41.5	2.9	Tetrachloro-m-xylene
13.897	0.004	563414	14.120	0.001	336737	40.0	43.0	7.3	Decachlorobiphenyl

* Indicates RPD > 40%

INTERNAL STANDARD SUMMARY

Column 1

Standard Cpnd	Standard Area*	Sample Area	%D
Bromo-Nitrobenzene	673778	673778	0.0
Hexabromobiphenyl	1429847	1429847	0.0

Column 2

Standard Cpnd	Standard Area*	Sample Area	%D
Bromo-Nitrobenzene	315256	315256	0.0
Hexabromobiphenyl	513946	513946	0.0

* Standard Areas taken from Initial Cal Level 3
Initial Calibration Date: 24-FEB-2023
<- Indicates standard response outside Limits (-50 to +100%)

Aroclor	Peak#	RT (ZB5 Col)	Shift	Area	Amount	Peak#	RT (ZB35 Col)	Shift	Area	Amount
Aroclor-1016	1	7.272	0.001	66125	258.4	1	7.255	-0.001	46626	252.6
Aroclor-1016	2	7.654	-0.000	207370	265.8	2	7.855	-0.001	101071	270.1
Aroclor-1016	3	7.792	0.002	92507	242.9	3	8.055	0.001	43448	257.1
Aroclor-1016	4	8.406	0.001	64388	261.5	4	8.306	-0.000	33986	256.3

Total Col1Ave (4 peaks): 257.2 Total Col2Ave (4 peaks): 259.0 RPD = 1

Corrected Ave (3 peaks): 254.3 Corrected Ave (3 peaks): 255.3 RPD = 0

CalAmt %D: 2.9 CalAmt %D: 3.6

Aroclor-1260	1	11.046	0.001	138355	269.0	1	11.653	0.001	77114	255.2
Aroclor-1260	2	11.363	0.002	147051	273.6	2	11.918	0.001	203401	263.7
Aroclor-1260	3	11.736	0.003	383171	268.8	3	12.435	-0.000	51517	251.7
Aroclor-1260	4	12.141	0.002	200399	279.2	4	12.502	0.001	134797	259.3
Aroclor-1260	5	12.247	0.003	83796	271.2	NS	---			----

Total Col1Ave (5 peaks): 272.4 Total Col2Ave (4 peaks): 257.5 RPD = 6

Corrected Ave (4 peaks): 270.7 Corrected Ave (3 peaks): 255.4 RPD = 6

CalAmt %D: 8.9 CalAmt %D: 3.0

Total PCB Area Col1 (5.906 - 13.793) = 4024419 Col1 Total PCB = 0.5 ppm*

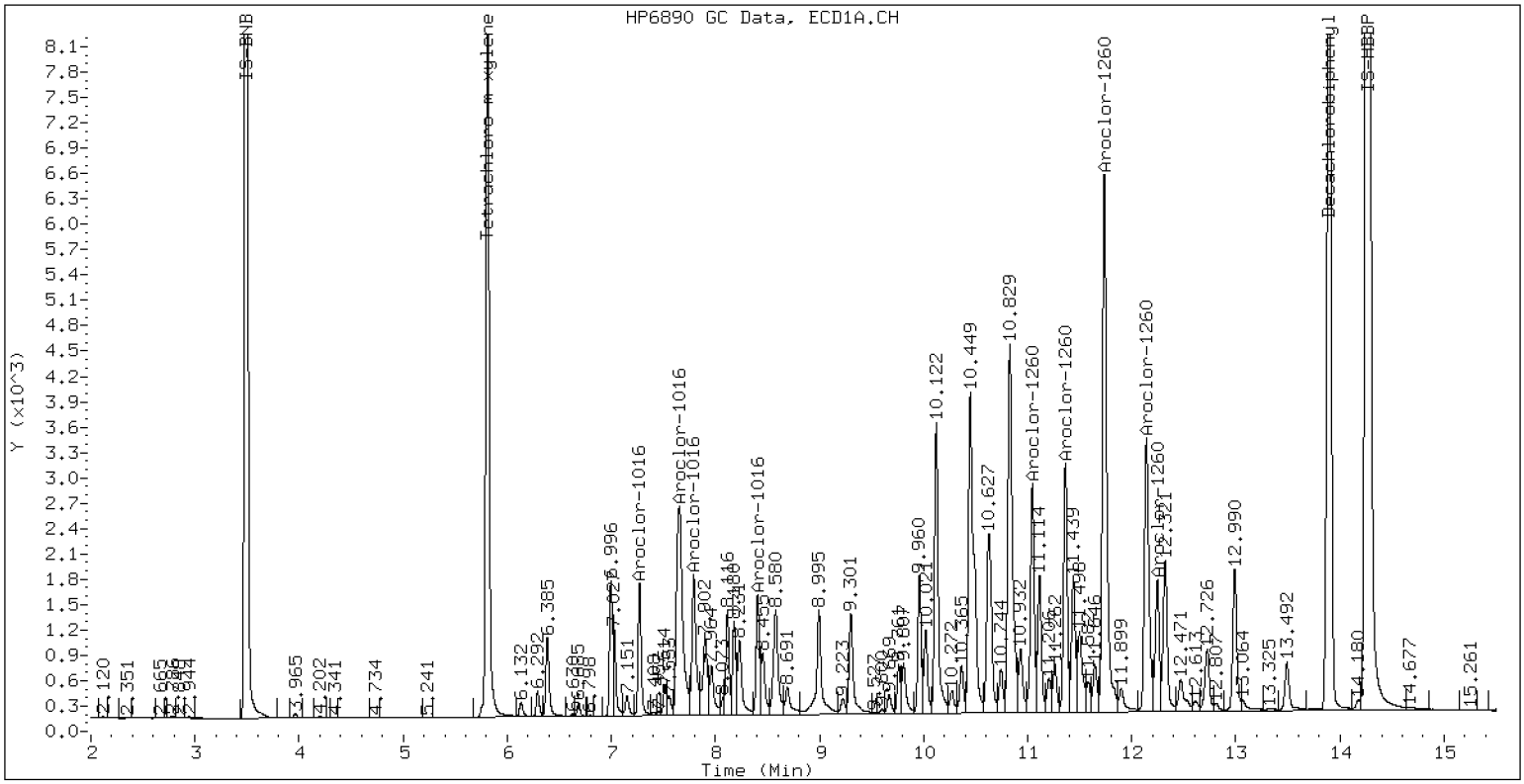
Total PCB Area Col2 (5.785 - 14.019) = 1889311 Col2 Total PCB = 0.5 ppm*

* Quantitated against AR1660 0.25ppm in Ical

PCB-Form 10 Mod.

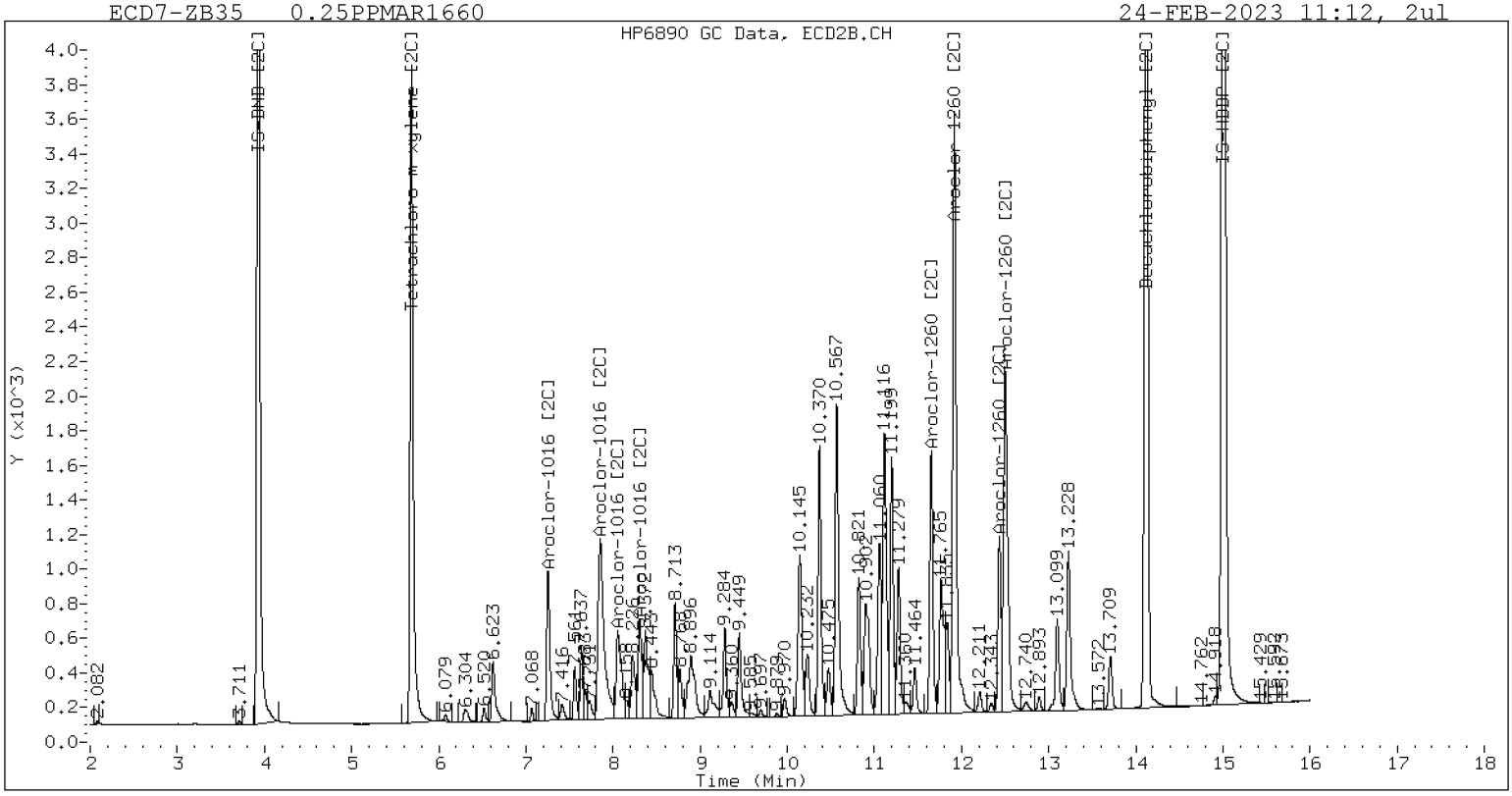
PCB Dual Column Chromatograms

ECD7-ZB5 0.25PPMAR1660 24-FEB-2023 11:12, 2ul



ZB-5 Manual Integration: NO

ECD7-ZB35 0.25PPMAR1660 24-FEB-2023 11:12, 2ul



ZB-35 Manual Integration: NO

Analytical Resources Inc.
Dual Column 608/8082 PCB Quantitation Report

Data file 1: /230224.b/02242303ECD7.D
Data file 2: /230224.b/230224.b/02242303ECD7.D
Method: \\target\share\chem4\ecd7.i\230224.b\PCB.m
Compound Sublist: AR1660.sub
Instrument, Inj. Vol.: ecd7.i, 2ul
Quant Method: Internal Std

ARI ID: 0.02PPMAR1660
Client ID:
Injection Date: 24-FEB-2023 11:33
Report Date: 02/28/2023 09:50
Matrix: NONE
Dilution Factor: 1.0

SURROGATES

ZB5 Col			ZB35 Col			ZB5	ZB35		
RT	Shift	Response	RT	Shift	Response	on col	on col	RPD	Compound/Flag
5.809	0.002	29768	5.688	0.003	14932	3.1	3.3	5.7	Tetrachloro-m-xylene
13.893	0.000	45992	14.120	0.000	23950	3.4	3.1	9.1	Decachlorobiphenyl

* Indicates RPD > 40%

INTERNAL STANDARD SUMMARY

Column 1

Standard Cpnd	Standard Area*	Sample Area	%D
Bromo-Nitrobenzene	673778	637010	-5.5
Hexabromobiphenyl	1429847	1386953	-3.0

Column 2

Standard Cpnd	Standard Area*	Sample Area	%D
Bromo-Nitrobenzene	315256	307177	-2.6
Hexabromobiphenyl	513946	511463	-0.5

* Standard Areas taken from Initial Cal Level 3
Initial Calibration Date: 24-FEB-2023
<- Indicates standard response outside Limits (-50 to +100%)

	ZB5 Col				ZB35 Col				
Aroclor	Peak#	RT	Shift	Area	Amount	Peak#	RT	Shift	Area	Amount
Aroclor-1016	1	7.272	0.001	5052	20.9	1	7.256	0.000	3894	21.7
Aroclor-1016	2	7.659	0.005	14714	19.9	2	7.864	0.008	6253	17.1
Aroclor-1016	3	7.795	0.005	8226	22.8	3	8.060	0.006	3076	18.7
Aroclor-1016	4	8.407	0.002	4780	20.5	4	8.309	0.002	2443	18.9

Total Col1Ave (4 peaks): 21.1 Total Col2Ave (4 peaks): 19.1 RPD = 10
Corrected Ave (3 peaks): 20.5 Corrected Ave (3 peaks): 18.2 RPD = 11

CalAmt %D: 5.3 CalAmt %D: -4.5

Aroclor-1260	1	11.047	0.003	10147	20.3	1	11.656	0.003	6759	22.5
Aroclor-1260	2	11.364	0.003	10287	19.7	2	11.922	0.005	16592	21.6
Aroclor-1260	3	11.740	0.006	28043	20.3	3	12.438	0.002	4506	22.1
Aroclor-1260	4	12.145	0.006	13540	19.4	4	12.505	0.004	11037	21.3
Aroclor-1260	5	12.246	0.002	6182	20.6	NS	---			----

Total Col1Ave (5 peaks): 20.1 Total Col2Ave (4 peaks): 21.9 RPD = 9
Corrected Ave (4 peaks): 19.9 Corrected Ave (3 peaks): 21.7 RPD = 8

CalAmt %D: 0.4 CalAmt %D: 9.4

Total PCB Area Col1 (5.906 - 13.793) = 324832 Col1 Total PCB = 0.0 ppm*

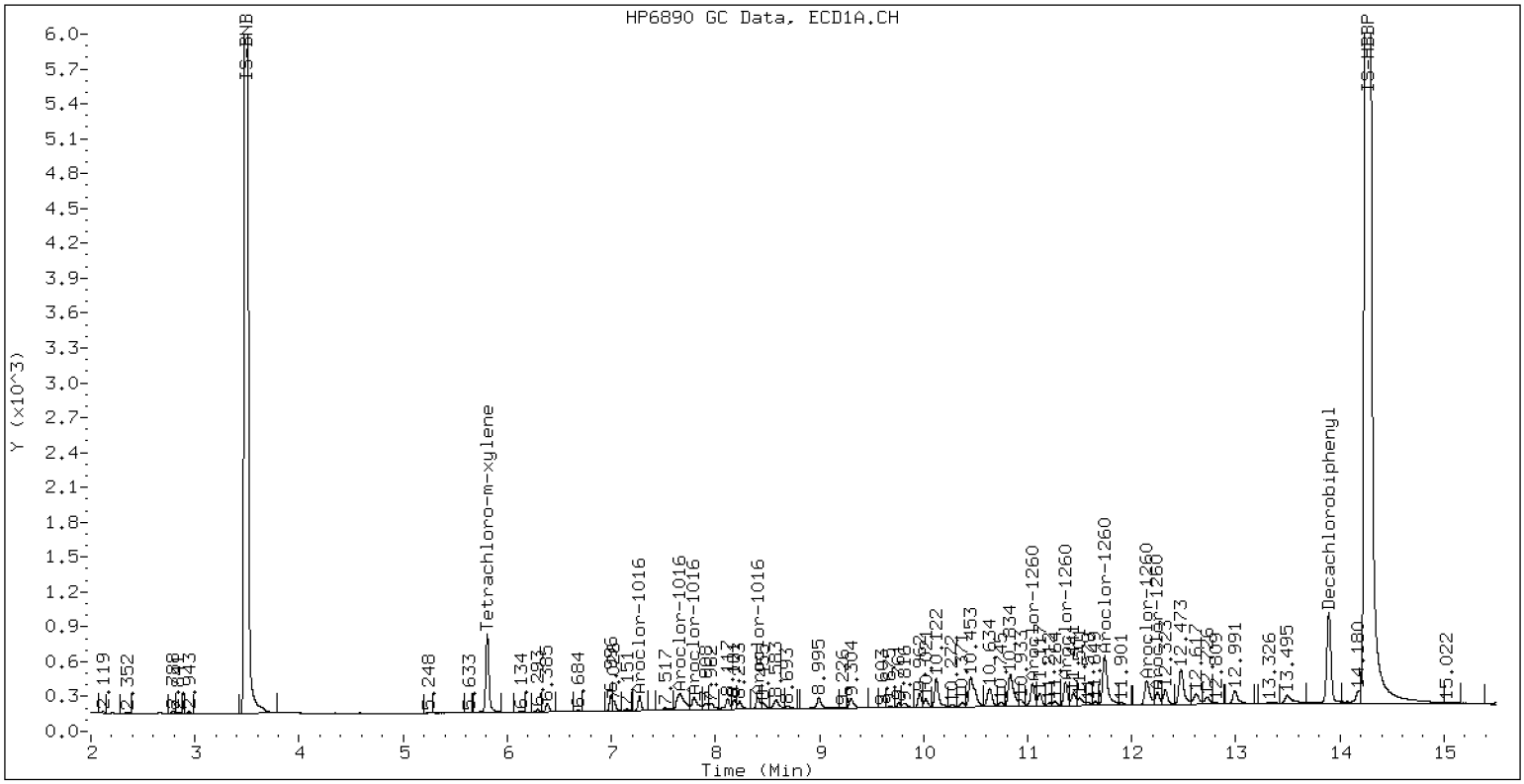
Total PCB Area Col2 (5.785 - 14.019) = 157149 Col2 Total PCB = 0.0 ppm*

* Quantitated against AR1660 0.25ppm in Ical

PCB-Form 10 Mod.

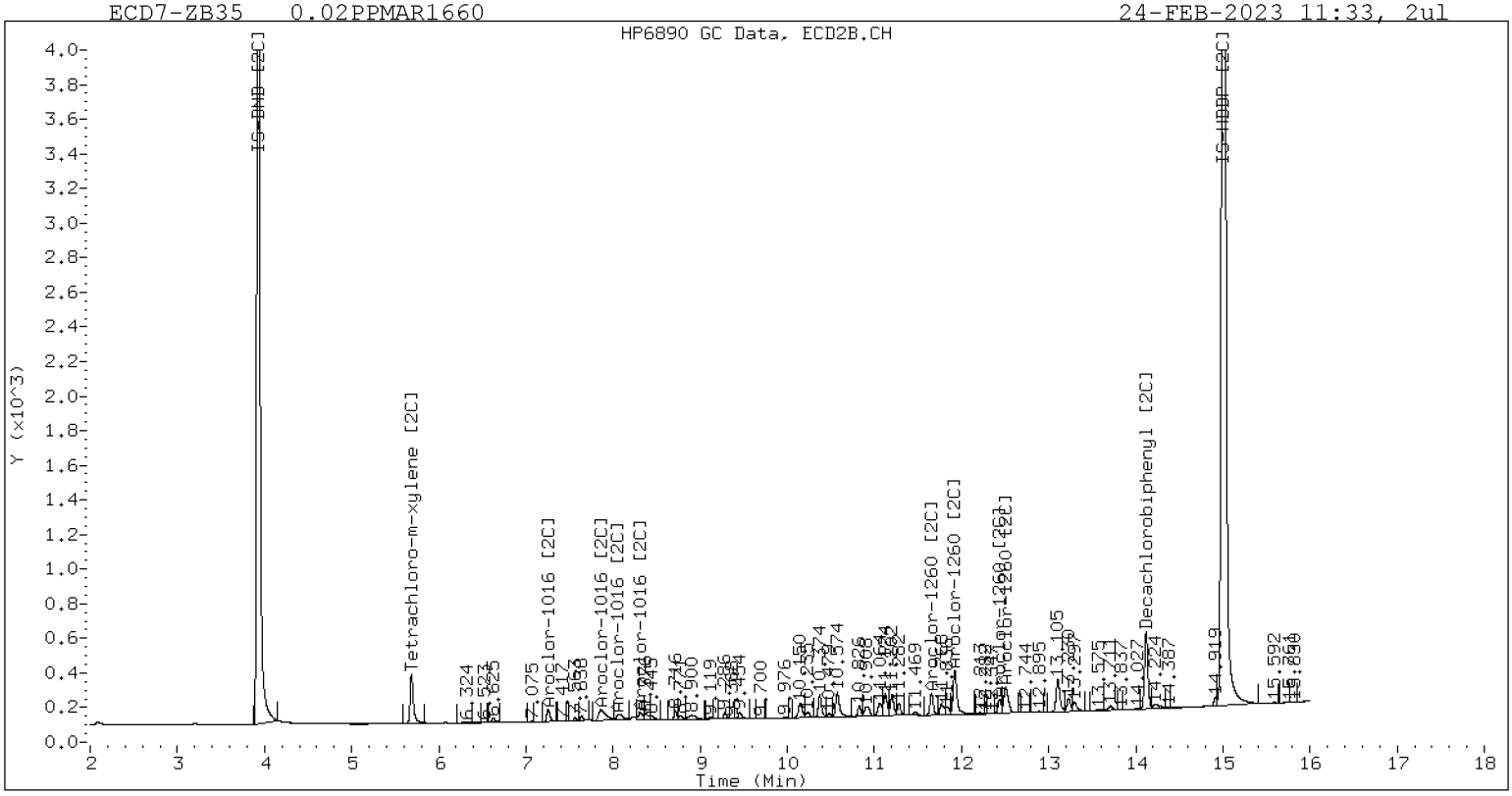
PCB Dual Column Chromatograms

ECD7-ZB5 0.02PPMAR1660 24-FEB-2023 11:33, 2ul



ZB-5 Manual Integration: NO

ECD7-ZB35 0.02PPMAR1660 24-FEB-2023 11:33, 2ul

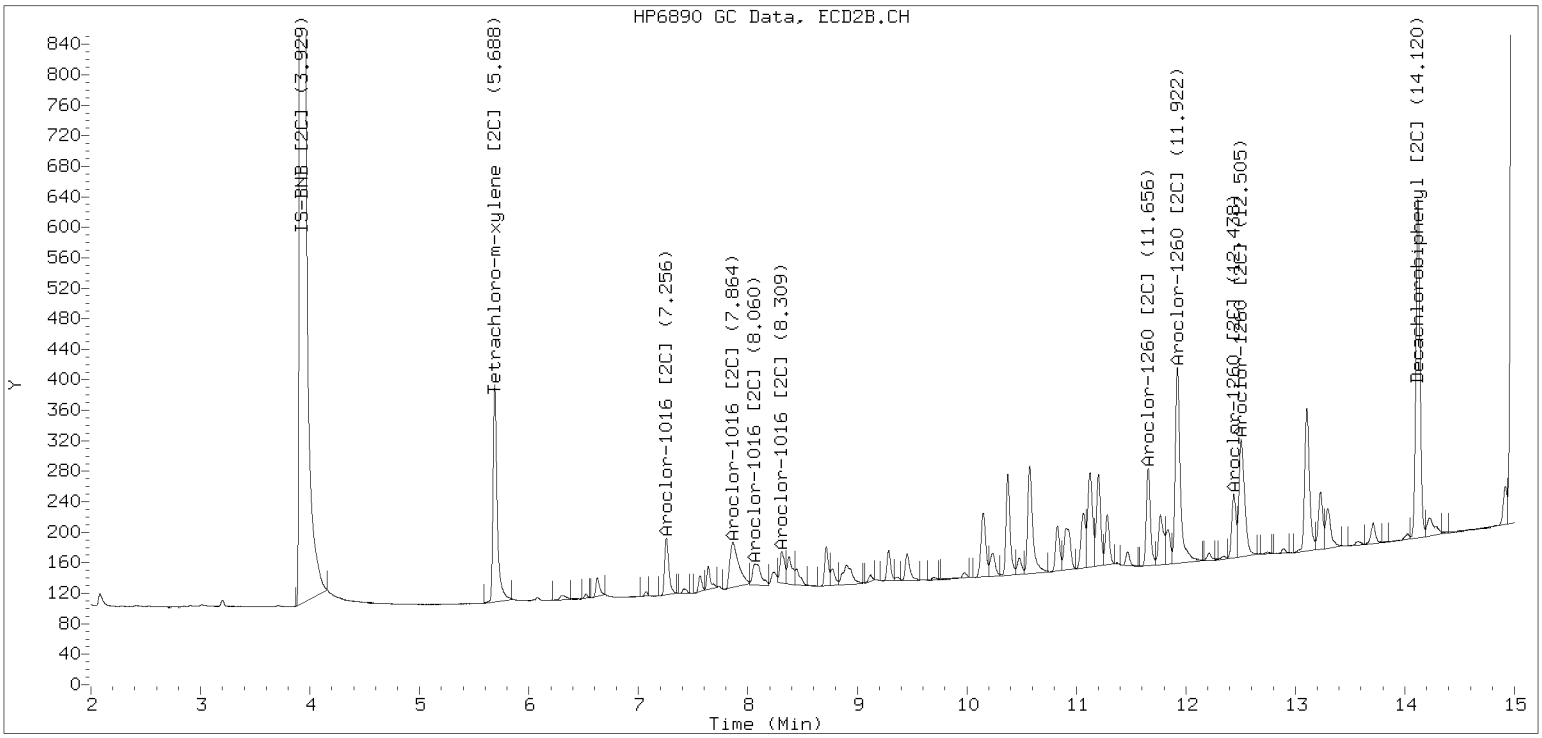


ZB-35 Manual Integration: YES

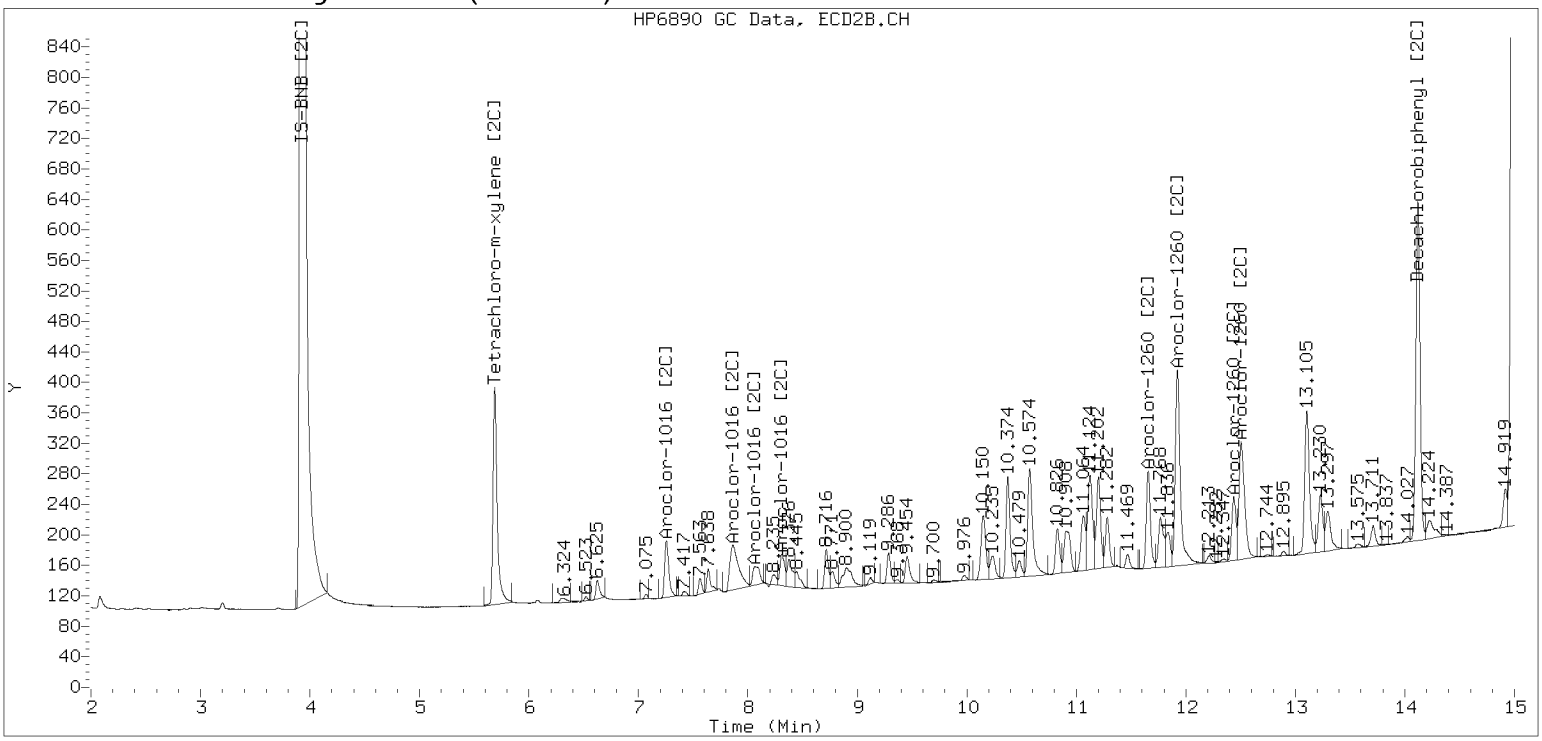
Manual Peak Adjustment, ZB-35

Datafile: ecd7.i/230224.b/230224.b/02242303ECD7.D Injection Date: 24-FEB-2023

Manual Integration (After)



Processed Integration (Before)



Analytical Resources Inc.
Dual Column 608/8082 PCB Quantitation Report

Data file 1: /230224.b/02242304ECD7.D
Data file 2: /230224.b/230224.b/02242304ECD7.D
Method: \\target\share\chem4\ecd7.i\230224.b\PCB.m
Compound Sublist: AR1660.sub
Instrument, Inj. Vol.: ecd7.i, 2ul
Quant Method: Internal Std

ARI ID: 0.05PPMAR1660
Client ID:
Injection Date: 24-FEB-2023 11:54
Report Date: 02/28/2023 09:50
Matrix: NONE
Dilution Factor: 1.0

SURROGATES

ZB5 Col RT	ZB5 Col Shift	ZB5 Col Response	ZB35 Col RT	ZB35 Col Shift	ZB35 Col Response	ZB5 on col	ZB35 on col	RPD	Compound/Flag
5.809	0.003	78493	5.688	0.003	36772	8.3	8.1	2.2	Tetrachloro-m-xylene
13.893	-0.000	113544	14.119	-0.000	62745	8.2	7.9	3.4	Decachlorobiphenyl

* Indicates RPD > 40%

INTERNAL STANDARD SUMMARY

Column 1

Standard Cpnd	Standard Area*	Sample Area	%D
Bromo-Nitrobenzene	673778	630965	-6.4
Hexabromobiphenyl	1429847	1409464	-1.4

Column 2

Standard Cpnd	Standard Area*	Sample Area	%D
Bromo-Nitrobenzene	315256	307599	-2.4
Hexabromobiphenyl	513946	521112	1.4

* Standard Areas taken from Initial Cal Level 3
Initial Calibration Date: 24-FEB-2023
<- Indicates standard response outside Limits (-50 to +100%)

	ZB5 Col				ZB35 Col				
Aroclor	Peak#	RT	Shift	Area	Amount	Peak#	RT	Shift	Area	Amount
Aroclor-1016	1	7.272	0.002	12829	53.5	1	7.256	0.000	9654	53.6
Aroclor-1016	2	7.660	0.006	36461	49.9	2	7.864	0.008	18085	49.5
Aroclor-1016	3	7.795	0.005	19865	55.7	3	8.063	0.008	9071	55.0
Aroclor-1016	4	8.408	0.003	11411	49.5	4	8.310	0.003	7309	56.5
Total Col1Ave (4 peaks):				52.2		Total Col2Ave (4 peaks):			53.7	RPD = 3
Corrected Ave (3 peaks):				51.0		Corrected Ave (3 peaks):			52.7	RPD = 3
CalAmt %D:				4.3		CalAmt %D:			7.3	
Aroclor-1260	1	11.046	0.002	25727	50.7	1	11.655	0.002	15996	52.2
Aroclor-1260	2	11.363	0.002	26482	50.0	2	11.922	0.004	40487	51.8
Aroclor-1260	3	11.739	0.005	70871	50.4	3	12.437	0.002	10248	49.4
Aroclor-1260	4	12.143	0.004	34239	48.4	4	12.506	0.004	26828	50.9
Aroclor-1260	5	12.246	0.002	15109	49.6	NS	---			----
Total Col1Ave (5 peaks):				49.8		Total Col2Ave (4 peaks):			51.1	RPD = 2
Corrected Ave (4 peaks):				49.6		Corrected Ave (3 peaks):			50.7	RPD = 2
CalAmt %D:				-0.3		CalAmt %D:			2.1	

Total PCB Area Col1 (5.906 - 13.793) = 758292 Col1 Total PCB = 0.1 ppm*

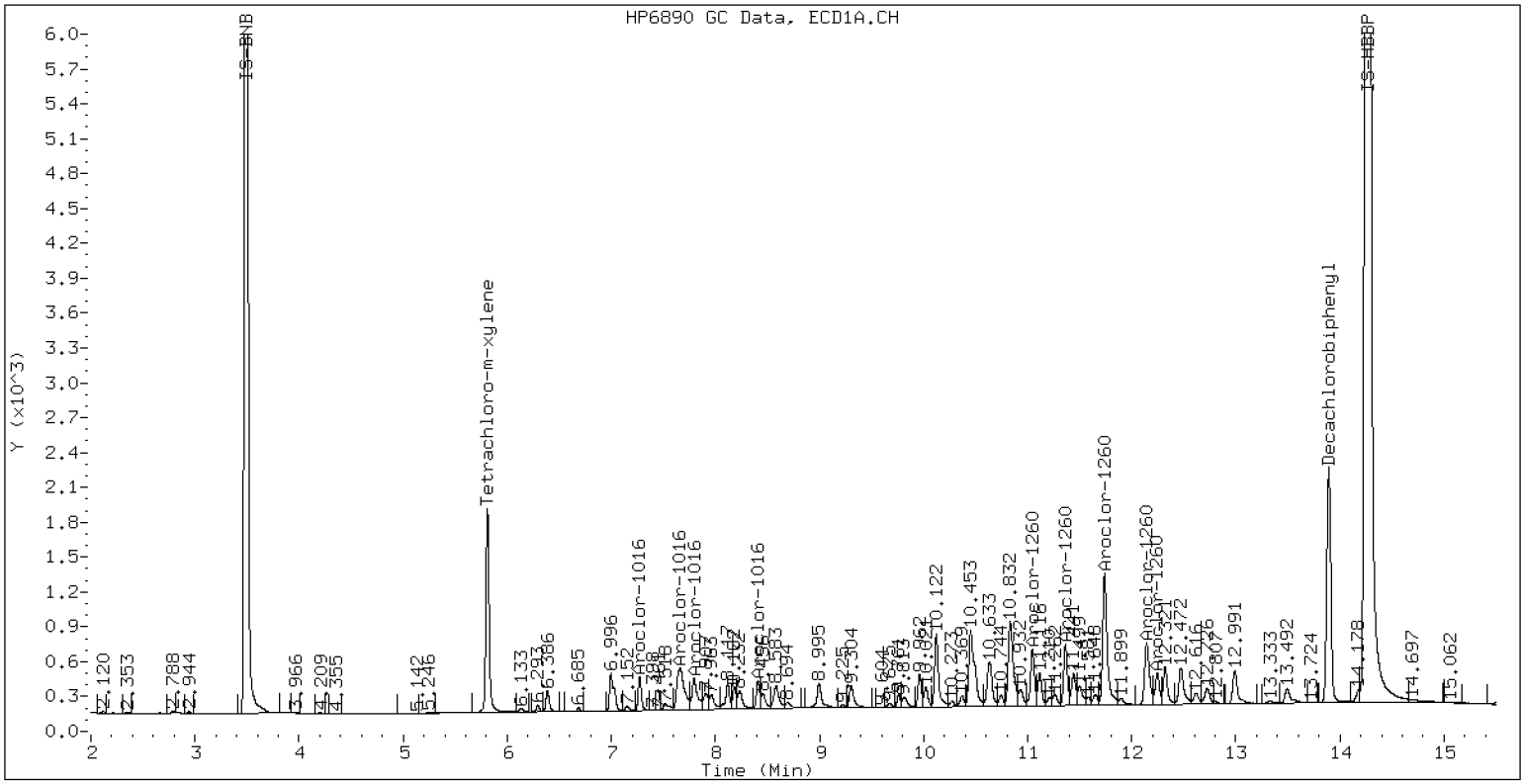
Total PCB Area Col2 (5.785 - 14.019) = 386383 Col2 Total PCB = 0.1 ppm*

* Quantitated against AR1660 0.25ppm in Ical

PCB-Form 10 Mod.

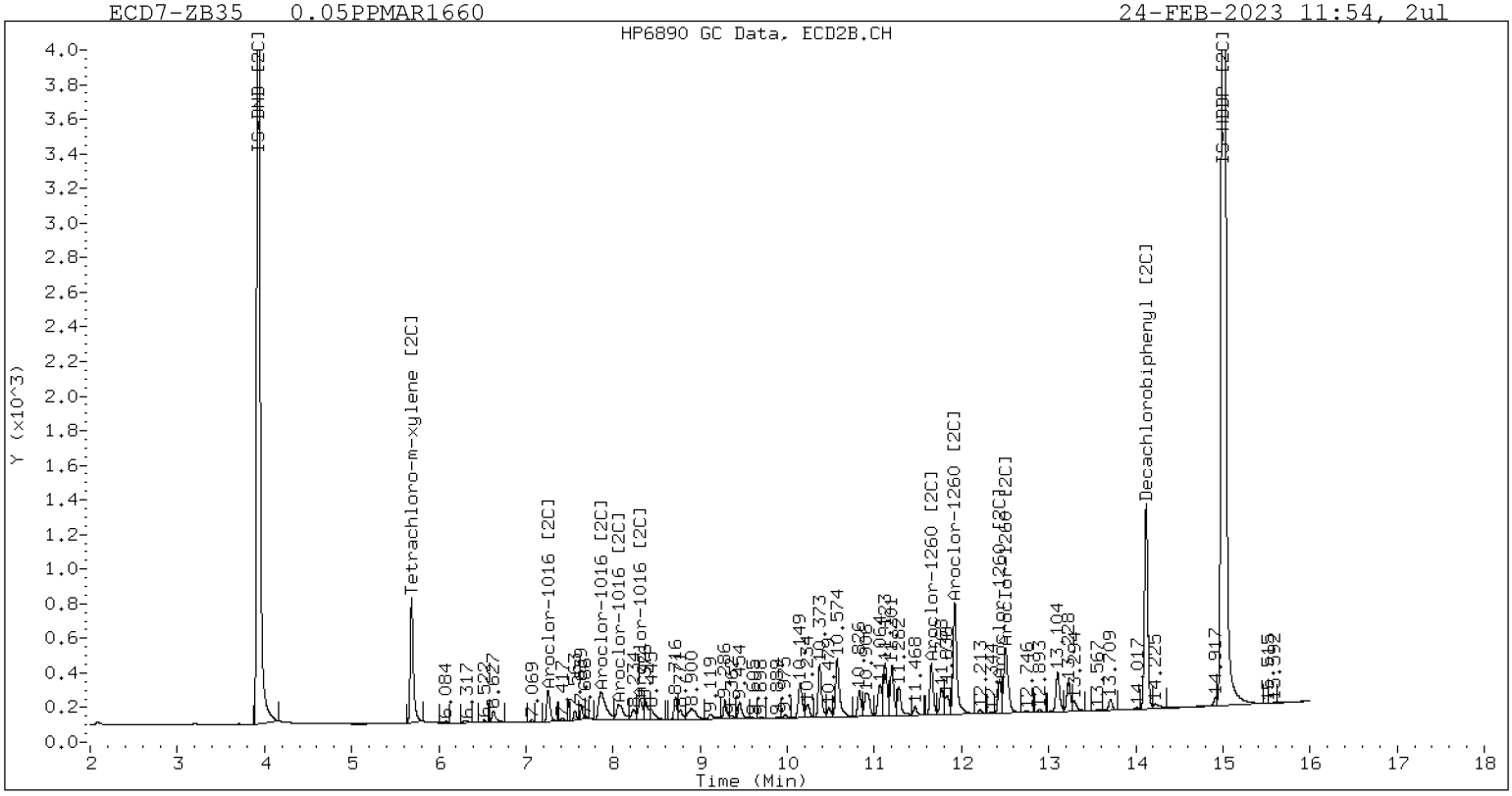
PCB Dual Column Chromatograms

ECD7-ZB5 0.05PPMAR1660 24-FEB-2023 11:54, 2ul



ZB-5 Manual Integration: NO

ECD7-ZB35 0.05PPMAR1660 24-FEB-2023 11:54, 2ul



ZB-35 Manual Integration: NO

Analytical Resources Inc.
Dual Column 608/8082 PCB Quantitation Report

Data file 1: /230224.b/02242305ECD7.D
Data file 2: /230224.b/230224.b/02242305ECD7.D
Method: \\target\share\chem4\ecd7.i\230224.b\PCB.m
Compound Sublist: AR1660.sub
Instrument, Inj. Vol.: ecd7.i, 2ul
Quant Method: Internal Std

ARI ID: 1.0PPMAR1660
Client ID:
Injection Date: 24-FEB-2023 12:15
Report Date: 02/28/2023 09:50
Matrix: NONE
Dilution Factor: 1.0

SURROGATES

ZB5 Col RT	ZB5 Col Shift	ZB5 Col Response	ZB35 Col RT	ZB35 Col Shift	ZB35 Col Response	ZB5 on col	ZB35 on col	RPD	Compound/Flag
5.813	0.006	1641874	5.688	0.003	709674	166.2	151.5	9.3	Tetrachloro-m-xylene
13.899	0.006	2344583	14.122	0.002	1300114	161.9	158.6	2.1	Decachlorobiphenyl

* Indicates RPD > 40%

INTERNAL STANDARD SUMMARY

Column 1

Standard Cpnd	Standard Area*	Sample Area	%D
Bromo-Nitrobenzene	673778	661440	-1.8
Hexabromobiphenyl	1429847	1470100	2.8

Column 2

Standard Cpnd	Standard Area*	Sample Area	%D
Bromo-Nitrobenzene	315256	319272	1.3
Hexabromobiphenyl	513946	538138	4.7

* Standard Areas taken from Initial Cal Level 3
Initial Calibration Date: 24-FEB-2023
<- Indicates standard response outside Limits (-50 to +100%)

	ZB5 Col					ZB35 Col				
Aroclor	Peak#	RT	Shift	Area	Amount	Peak#	RT	Shift	Area	Amount
Aroclor-1016	1	7.270	-0.000	220519	877.8	1	7.254	-0.001	162833	871.2
Aroclor-1016	2	7.652	-0.002	731607	955.3	2	7.852	-0.004	373610	985.8
Aroclor-1016	3	7.789	-0.001	307629	822.8	3	8.051	-0.003	156666	915.2
Aroclor-1016	4	8.404	-0.001	229387	949.1	4	8.305	-0.002	117186	872.6

Total Col1Ave (4 peaks): 901.3 Total Col2Ave (4 peaks): 911.2 RPD = 1
Corrected Ave (3 peaks): 883.3 Corrected Ave (3 peaks): 886.3 RPD = 0

CalAmt %D: -9.9 CalAmt %D: -8.9

Aroclor-1260	1	11.044	-0.000	504641	954.2	1	11.652	-0.000	282606	893.1
Aroclor-1260	2	11.360	-0.001	524931	950.0	2	11.917	-0.000	709329	878.4
Aroclor-1260	3	11.734	-0.000	1410270	962.3	3	12.434	-0.001	215124	1003.8
Aroclor-1260	4	12.137	-0.002	720770	976.7	4	12.501	-0.001	506566	930.6
Aroclor-1260	5	12.243	-0.001	304211	957.7	NS	---			----

Total Col1Ave (5 peaks): 960.2 Total Col2Ave (4 peaks): 926.5 RPD = 4
Corrected Ave (4 peaks): 956.0 Corrected Ave (3 peaks): 900.7 RPD = 6

CalAmt %D: -4.0 CalAmt %D: -7.4

Total PCB Area Col1 (5.906 - 13.793) = 14454279 Col1 Total PCB = 1.8 ppm*

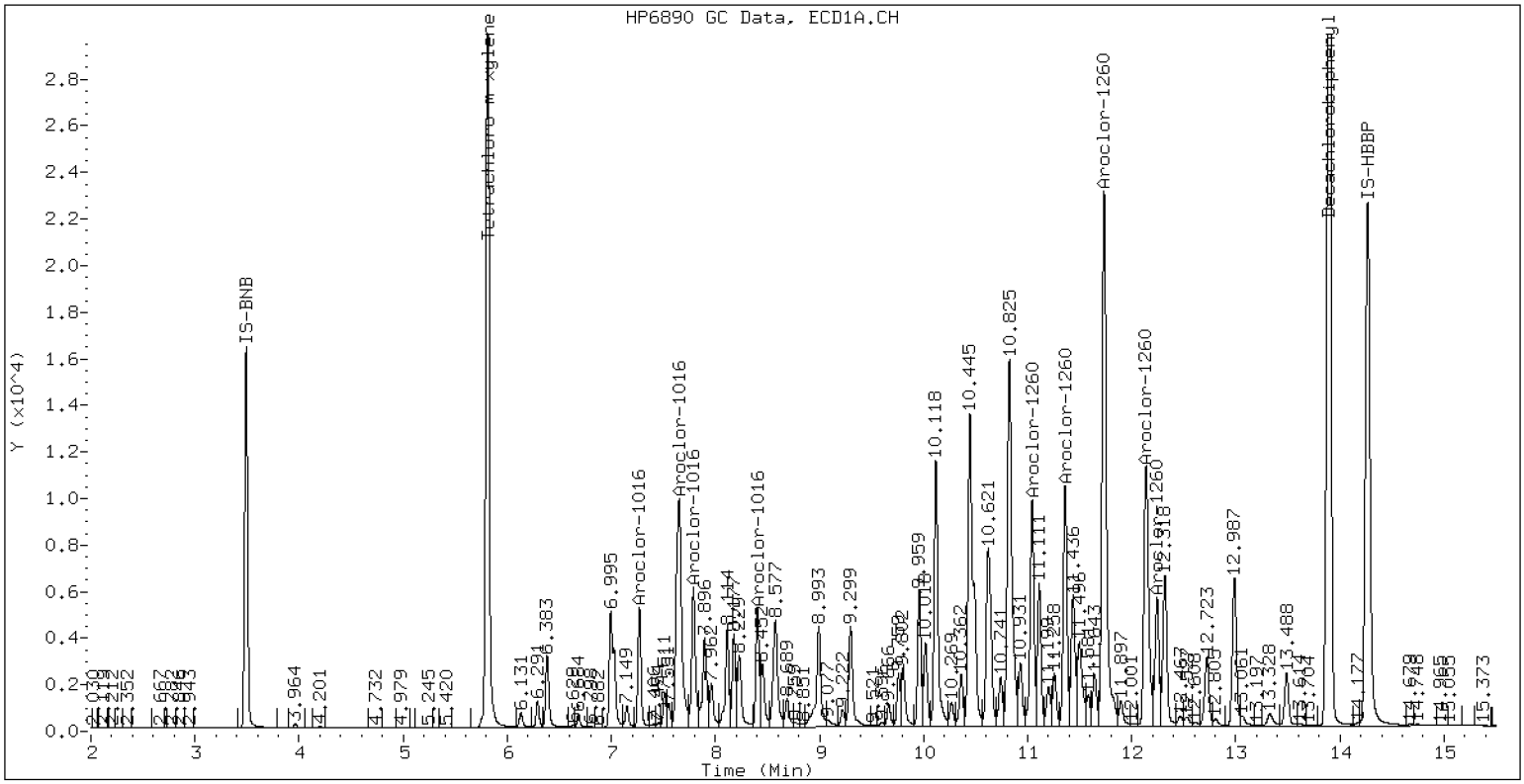
Total PCB Area Col2 (5.785 - 14.019) = 7029563 Col2 Total PCB = 1.8 ppm*

* Quantitated against AR1660 0.25ppm in Ical

PCB-Form 10 Mod.

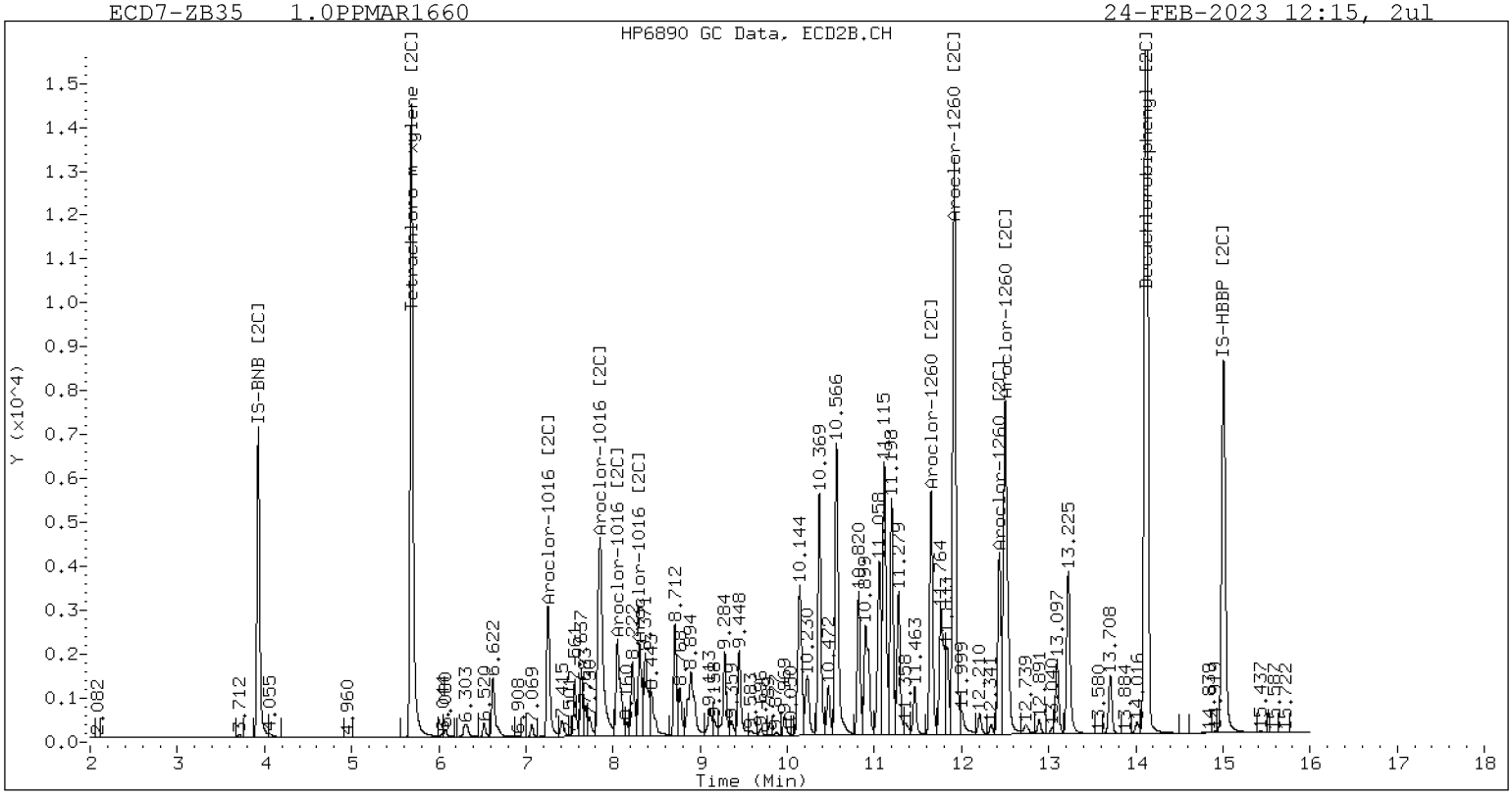
PCB Dual Column Chromatograms

ECD7-ZB5 1.0PPMAR1660 24-FEB-2023 12:15, 2ul



ZB-5 Manual Integration: NO

ECD7-ZB35 1.0PPMAR1660 24-FEB-2023 12:15, 2ul



ZB-35 Manual Integration: NO

Analytical Resources Inc.
Dual Column 608/8082 PCB Quantitation Report

Data file 1: /230224.b/02242306ECD7.D
Data file 2: /230224.b/230224.b/02242306ECD7.D
Method: \\target\share\chem4\ecd7.i\230224.b\PCB.m
Compound Sublist: AR1660.sub
Instrument, Inj. Vol.: ecd7.i, 2ul
Quant Method: Internal Std

ARI ID: 0.1PPMAR1660
Client ID:
Injection Date: 24-FEB-2023 12:36
Report Date: 02/28/2023 09:50
Matrix: NONE
Dilution Factor: 1.0

SURROGATES

ZB5 Col			ZB35 Col			ZB5	ZB35		
RT	Shift	Response	RT	Shift	Response	on col	on col	RPD	Compound/Flag
5.809	0.002	155528	5.688	0.003	74628	15.9	16.0	0.9	Tetrachloro-m-xylene
13.892	-0.001	227253	14.119	-0.000	128496	15.8	15.8	0.5	Decachlorobiphenyl

* Indicates RPD > 40%

INTERNAL STANDARD SUMMARY

Column 1

Standard Cpnd	Standard Area*	Sample Area	%D
Bromo-Nitrobenzene	673778	655979	-2.6
Hexabromobiphenyl	1429847	1464509	2.4

Column 2

Standard Cpnd	Standard Area*	Sample Area	%D
Bromo-Nitrobenzene	315256	317418	0.7
Hexabromobiphenyl	513946	532962	3.7

* Standard Areas taken from Initial Cal Level 3
Initial Calibration Date: 24-FEB-2023
<- Indicates standard response outside Limits (-50 to +100%)

	ZB5 Col				ZB35 Col				
Aroclor	Peak#	RT	Shift	Area	Amount	Peak#	RT	Shift	Area	Amount
Aroclor-1016	1	7.271	0.000	25761	103.4	1	7.255	-0.000	19315	103.9
Aroclor-1016	2	7.657	0.003	75616	99.6	2	7.863	0.007	40308	107.0
Aroclor-1016	3	7.794	0.004	39547	106.7	3	8.059	0.005	18304	107.6
Aroclor-1016	4	8.406	0.001	24260	101.2	4	8.309	0.002	14708	110.2

Total Col1Ave (4 peaks): 102.7 Total Col2Ave (4 peaks): 107.2 RPD = 4
Corrected Ave (3 peaks): 101.4 Corrected Ave (3 peaks): 106.2 RPD = 5

CalAmt %D: 2.7 CalAmt %D: 7.2

Aroclor-1260	1	11.045	0.000	52009	98.7	1	11.655	0.002	31282	99.8
Aroclor-1260	2	11.362	0.001	55116	100.1	2	11.920	0.003	80574	100.7
Aroclor-1260	3	11.738	0.004	145604	99.7	3	12.437	0.002	19566	92.2
Aroclor-1260	4	12.141	0.002	72408	98.5	4	12.503	0.001	53588	99.4
Aroclor-1260	5	12.245	0.001	30745	97.2	NS	---			----

Total Col1Ave (5 peaks): 98.8 Total Col2Ave (4 peaks): 98.0 RPD = 1
Corrected Ave (4 peaks): 98.5 Corrected Ave (3 peaks): 97.1 RPD = 1

CalAmt %D: -1.2 CalAmt %D: -2.0

Total PCB Area Col1 (5.906 - 13.793) = 1555762 Col1 Total PCB = 0.2 ppm*

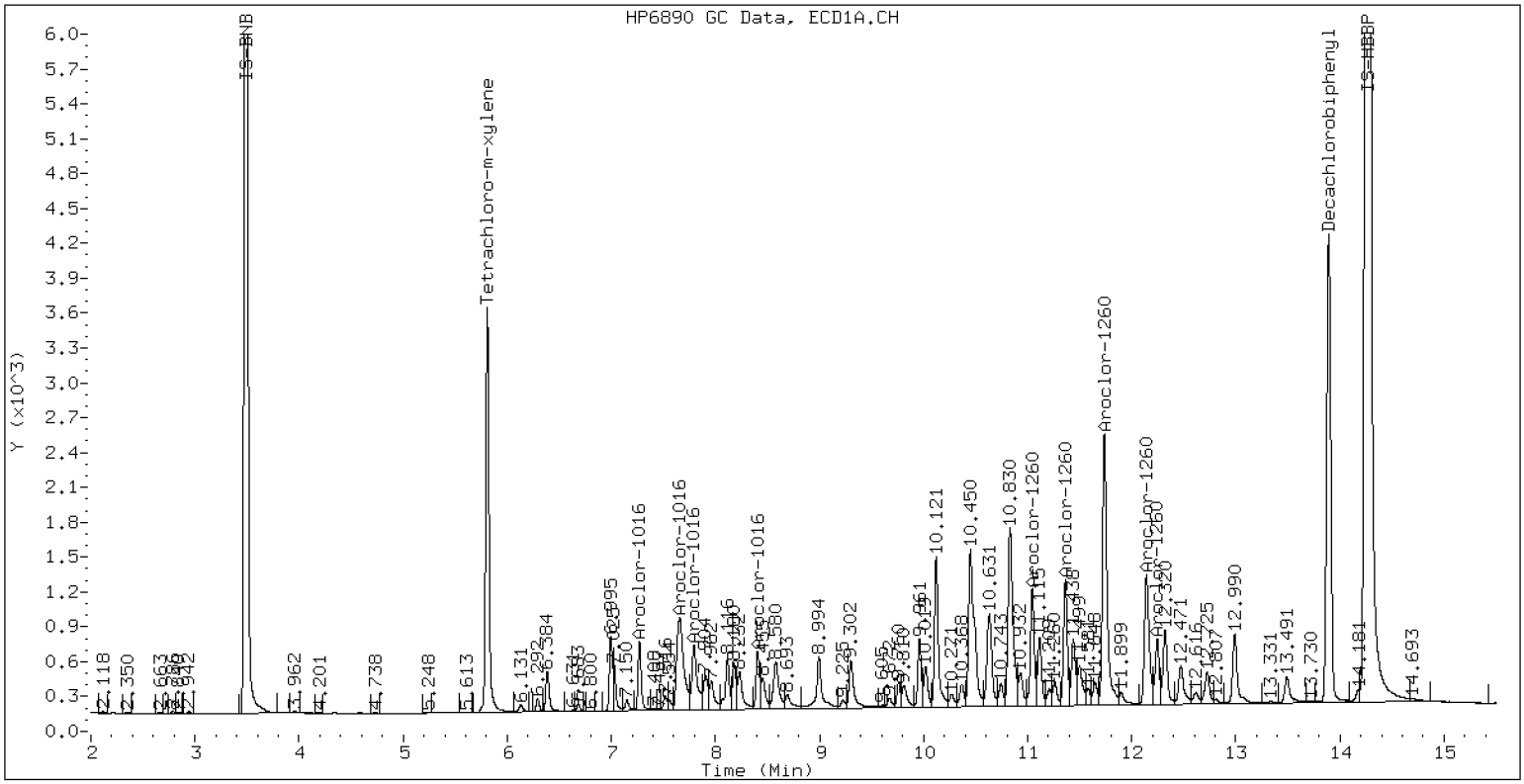
Total PCB Area Col2 (5.785 - 14.019) = 764924 Col2 Total PCB = 0.2 ppm*

* Quantitated against AR1660 0.25ppm in Ical

PCB-Form 10 Mod.

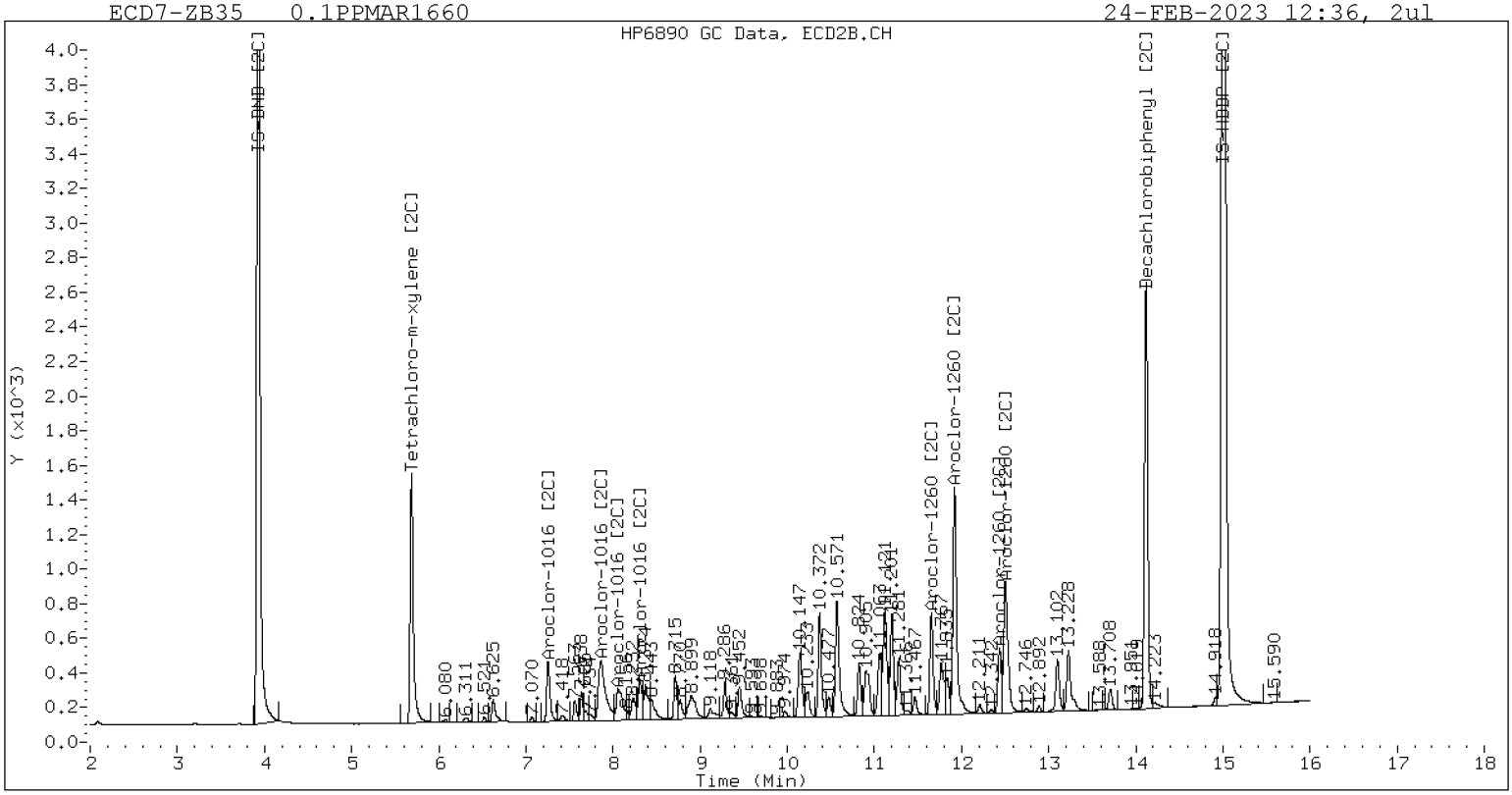
PCB Dual Column Chromatograms

ECD7-ZB5 0.1PPMAR1660 24-FEB-2023 12:36, 2ul



ZB-5 Manual Integration: NO

ECD7-ZB35 0.1PPMAR1660 24-FEB-2023 12:36, 2ul



ZB-35 Manual Integration: NO

Analytical Resources Inc.
Dual Column 608/8082 PCB Quantitation Report

Data file 1: /230224.b/02242307ECD7.D
Data file 2: /230224.b/230224.b/02242307ECD7.D
Method: \\target\share\chem4\ecd7.i\230224.b\PCB.m
Compound Sublist: AR1660.sub
Instrument, Inj. Vol.: ecd7.i, 2ul
Quant Method: Internal Std

ARI ID: 0.5PPMAR1660
Client ID:
Injection Date: 24-FEB-2023 12:57
Report Date: 02/28/2023 09:50
Matrix: NONE
Dilution Factor: 1.0

SURROGATES

ZB5 Col RT	ZB5 Col Shift	ZB5 Col Response	ZB35 Col RT	ZB35 Col Shift	ZB35 Col Response	ZB5 on col	ZB35 on col	RPD	Compound/Flag
5.810	0.004	724614	5.688	0.003	359257	75.2	76.7	2.0	Tetrachloro-m-xylene
13.898	0.005	1056911	14.120	0.000	650153	74.3	79.5	6.9	Decachlorobiphenyl

* Indicates RPD > 40%

INTERNAL STANDARD SUMMARY

Column 1

Standard Cpnd	Standard Area*	Sample Area	%D
Bromo-Nitrobenzene	673778	645275	-4.2
Hexabromobiphenyl	1429847	1445345	1.1

Column 2

Standard Cpnd	Standard Area*	Sample Area	%D
Bromo-Nitrobenzene	315256	319170	1.2
Hexabromobiphenyl	513946	536853	4.5

* Standard Areas taken from Initial Cal Level 3
Initial Calibration Date: 24-FEB-2023
<- Indicates standard response outside Limits (-50 to +100%)

	ZB5 Col				ZB35 Col				
Aroclor	Peak#	RT	Shift	Area	Amount	Peak#	RT	Shift	Area	Amount
Aroclor-1016	1	7.270	0.000	115193	470.0	1	7.256	0.000	86287	461.8
Aroclor-1016	2	7.654	0.000	369991	495.2	2	7.856	0.000	192524	508.1
Aroclor-1016	3	7.790	0.000	160952	441.3	3	8.055	0.000	81039	473.6
Aroclor-1016	4	8.405	0.000	115032	487.9	4	8.307	0.000	62136	462.8

Total Col1Ave (4 peaks): 473.6 Total Col2Ave (4 peaks): 476.6 RPD = 1
Corrected Ave (3 peaks): 466.4 Corrected Ave (3 peaks): 466.1 RPD = 0

CalAmt %D: -5.3 CalAmt %D: -4.7

Aroclor-1260	1	11.044	0.000	247212	475.5	1	11.653	0.000	145247	460.1
Aroclor-1260	2	11.361	0.000	262877	483.9	2	11.918	0.000	379838	471.5
Aroclor-1260	3	11.734	0.000	678830	471.1	3	12.436	0.000	104092	486.9
Aroclor-1260	4	12.139	0.000	356067	490.7	4	12.502	0.000	258953	476.9
Aroclor-1260	5	12.244	0.000	150280	481.2	NS	---			----

Total Col1Ave (5 peaks): 480.5 Total Col2Ave (4 peaks): 473.8 RPD = 1
Corrected Ave (4 peaks): 477.9 Corrected Ave (3 peaks): 469.5 RPD = 2

CalAmt %D: -3.9 CalAmt %D: -5.2

Total PCB Area Col1 (5.906 - 13.793) = 7134169 Col1 Total PCB = 0.9 ppm*

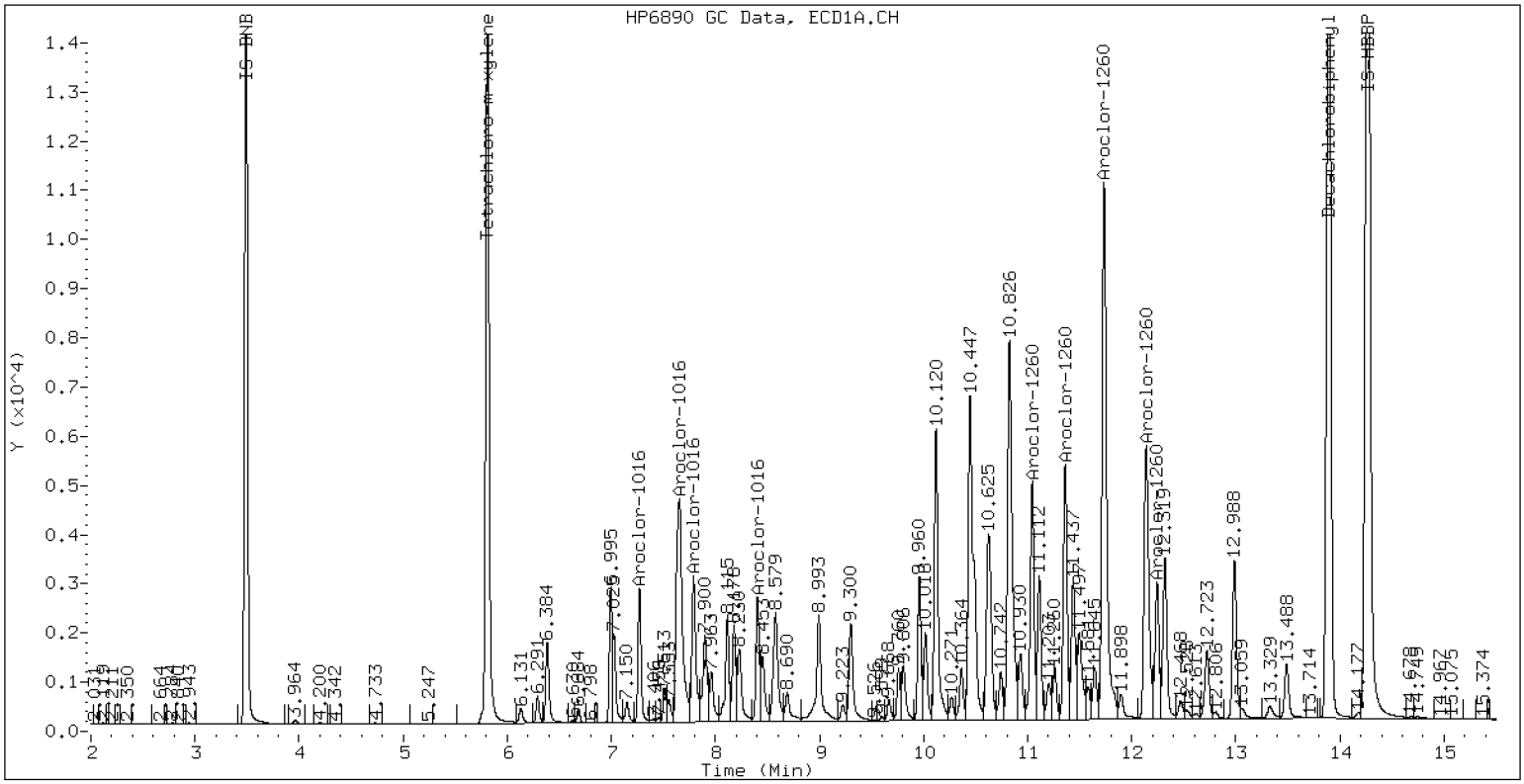
Total PCB Area Col2 (5.785 - 14.019) = 3589735 Col2 Total PCB = 0.9 ppm*

* Quantitated against AR1660 0.25ppm in Ical

PCB-Form 10 Mod.

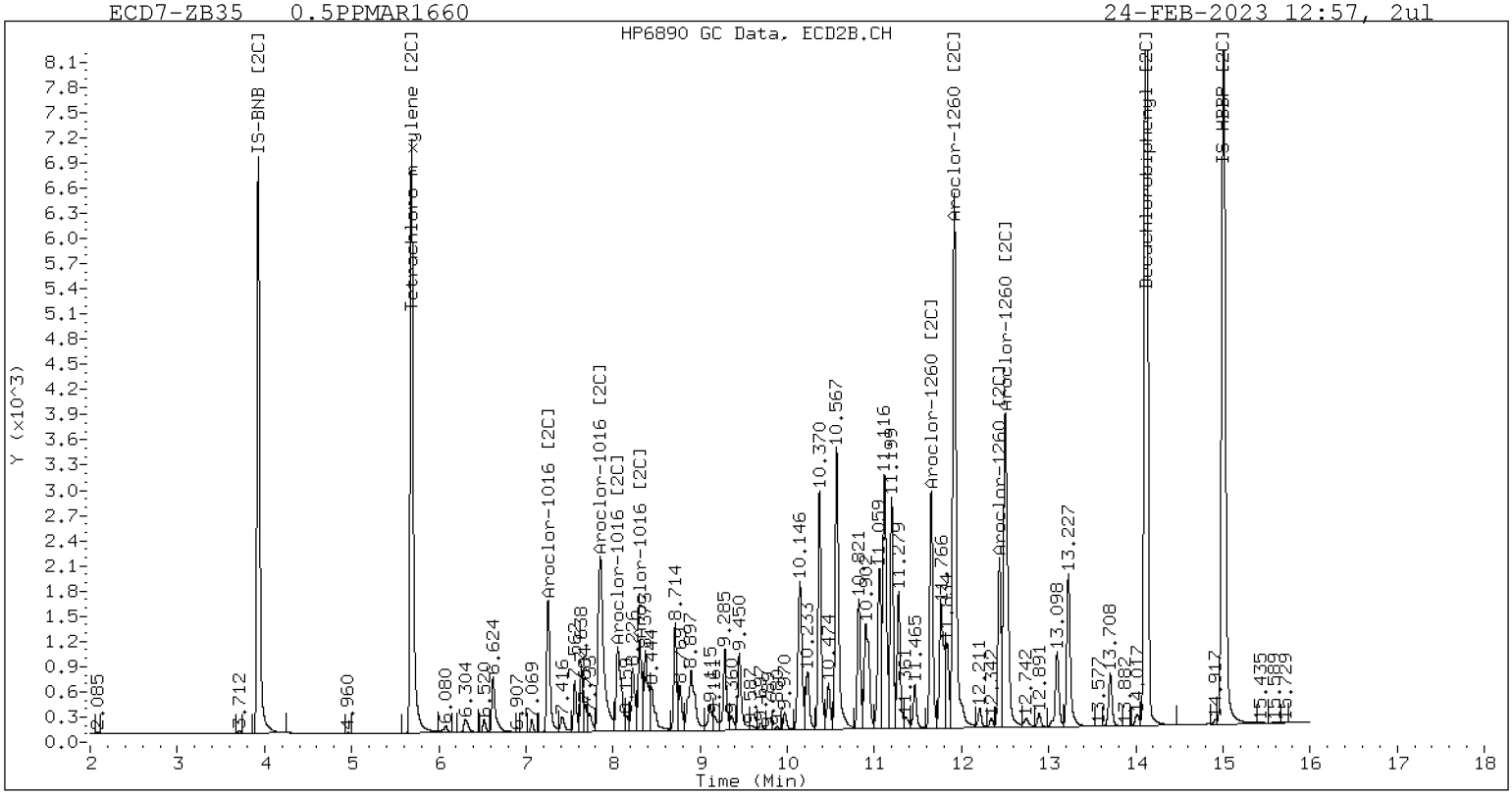
PCB Dual Column Chromatograms

ECD7-ZB5 0.5PPMAR1660 24-FEB-2023 12:57, 2ul



ZB-5 Manual Integration: NO

ECD7-ZB35 0.5PPMAR1660 24-FEB-2023 12:57, 2ul



ZB-35 Manual Integration: NO

Analytical Resources Inc.
Dual Column 608/8082 PCB Quantitation Report

Data file 1: /230224.b/02242308ECD7.D
Data file 2: /230224.b/230224.b/02242308ECD7.D
Method: \\target\share\chem4\ecd7.i\230224.b\PCB.m
Compound Sublist: AR1242.sub
Instrument, Inj. Vol.: ecd7.i, 2ul
Quant Method: Internal Std

ARI ID: 0.25PPMAR1242
Client ID:
Injection Date: 24-FEB-2023 13:18
Report Date: 02/28/2023 09:50
Matrix: NONE
Dilution Factor: 1.0

SURROGATES

ZB5 Col RT	ZB5 Col Shift	ZB5 Col Response	ZB35 Col RT	ZB35 Col Shift	ZB35 Col Response	ZB5 on col	ZB35 on col	RPD	Compound/Flag
5.809	0.003	434187	5.688	0.003	214306	46.0	46.5	1.1	Tetrachloro-m-xylene
13.894	0.000	515867	14.119	-0.001	312943	35.6	38.5	7.6	Decachlorobiphenyl

* Indicates RPD > 40%

INTERNAL STANDARD SUMMARY

Column 1

Standard Cpnd	Standard Area*	Sample Area	%D
Bromo-Nitrobenzene	673778	632576	-6.1
Hexabromobiphenyl	1429847	1469715	2.8

Column 2

Standard Cpnd	Standard Area*	Sample Area	%D
Bromo-Nitrobenzene	315256	314129	-0.4
Hexabromobiphenyl	513946	534294	4.0

* Standard Areas taken from Initial Cal Level 3
Initial Calibration Date: 24-FEB-2023
<- Indicates standard response outside Limits (-50 to +100%)

	ZB5 Col					ZB35 Col				
Aroclor	Peak#	RT	Shift	Area	Amount	Peak#	RT	Shift	Area	Amount
Aroclor-1242	1	7.271	0.000	49009	250.0	1	7.255	0.000	36487	250.0
Aroclor-1242	2	7.656	0.000	148833	250.0	2	7.858	0.000	76699	250.0
Aroclor-1242	3	8.405	0.000	46308	250.0	3	9.167	0.000	23866	250.0
Aroclor-1242	4	8.579	0.000	68453	250.0	4	9.597	0.000	29080	250.0

Total Col1Ave (4 peaks): 250.0 Total Col2Ave (4 peaks): 250.0 RPD = 0

Corrected Ave (3 peaks): 250.0 Corrected Ave (3 peaks): 250.0 RPD = 0

Total PCB Area Col1 (5.906 - 13.793) = 1221467 Col1 Total PCB = 0.2 ppm*

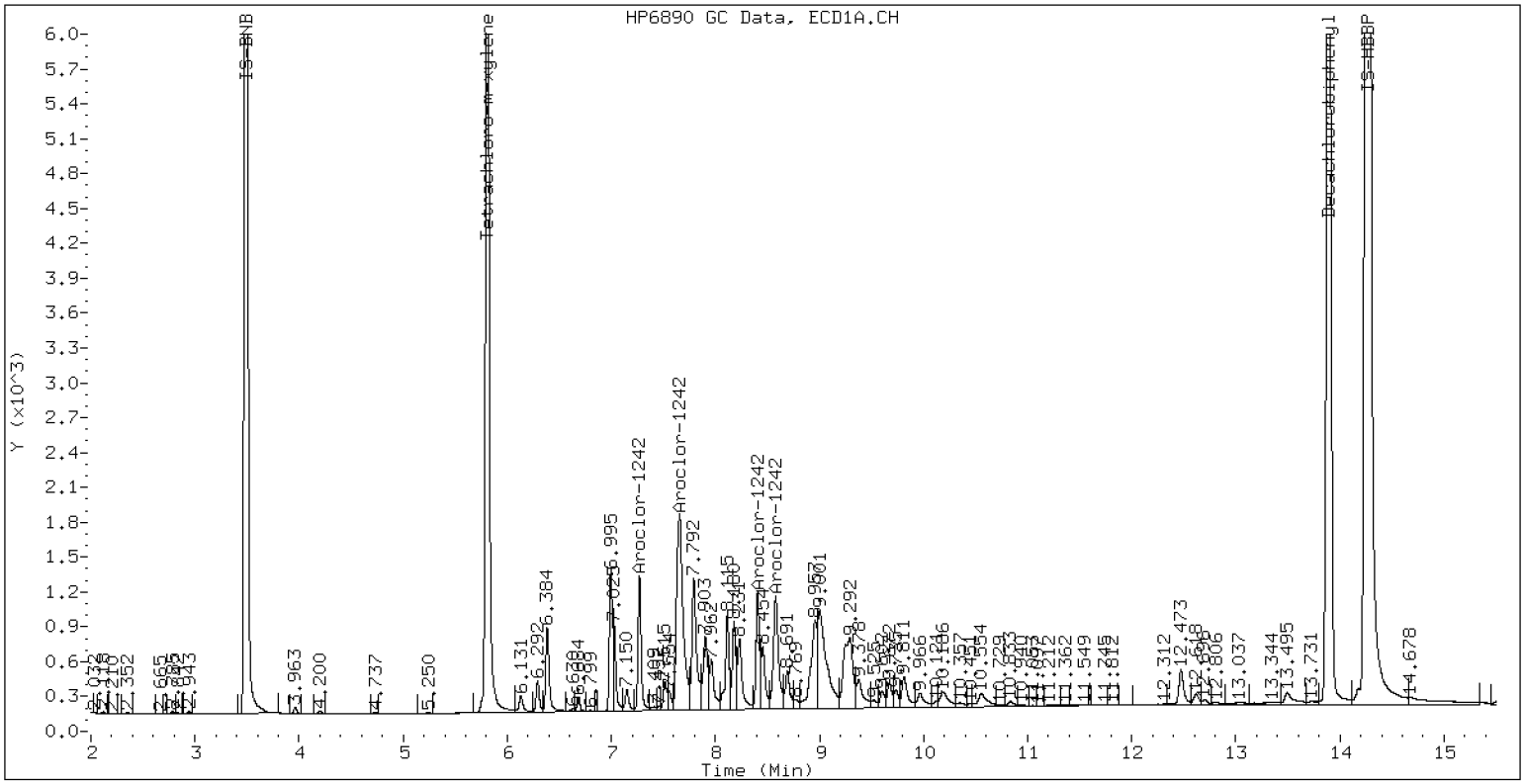
Total PCB Area Col2 (5.785 - 14.019) = 572067 Col2 Total PCB = 0.2 ppm*

* Quantitated against AR1660 0.25ppm in Ical

PCB-Form 10 Mod.

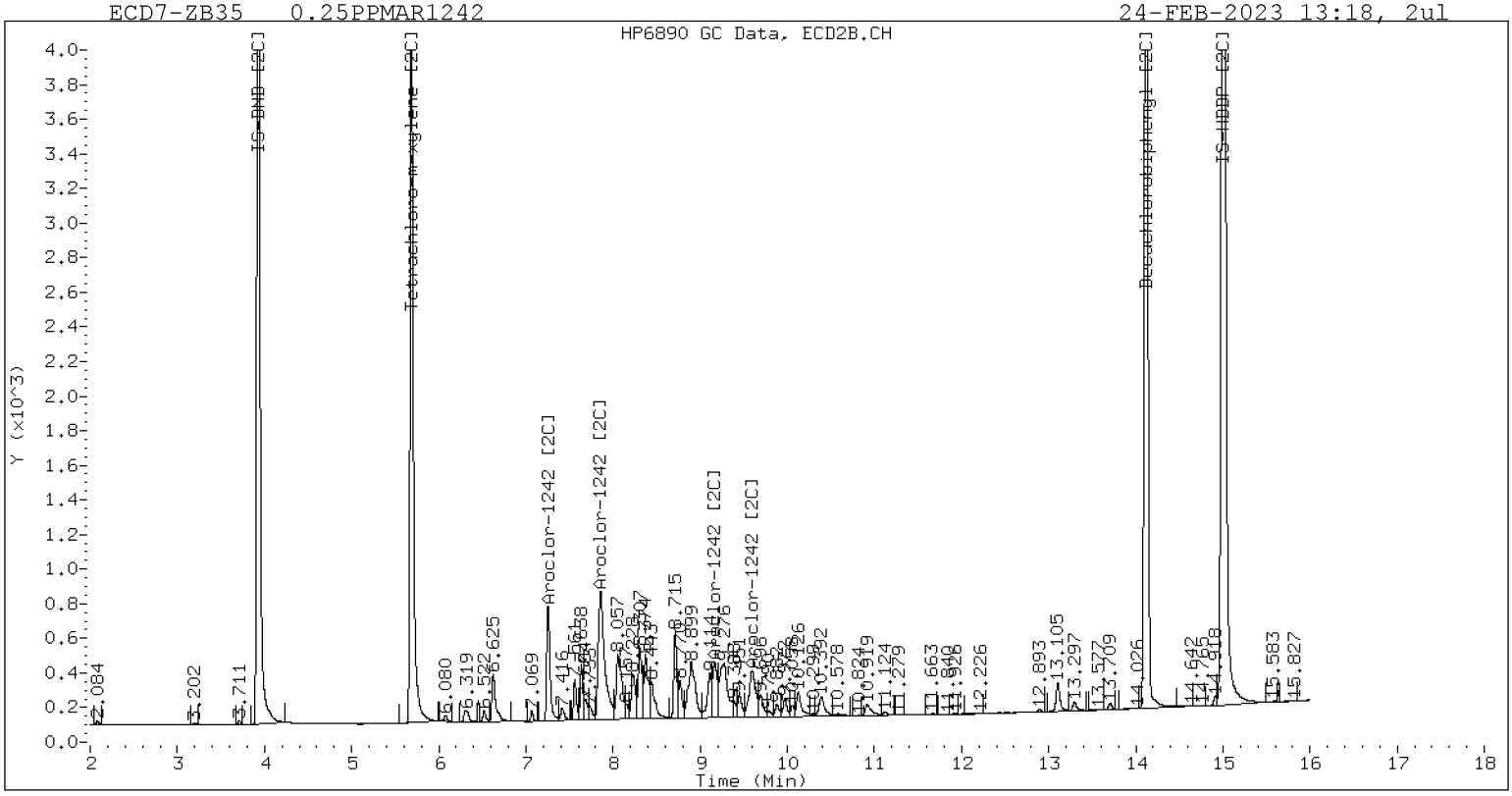
PCB Dual Column Chromatograms

ECD7-ZB5 0.25PPMAR1242 24-FEB-2023 13:18, 2ul



ZB-5 Manual Integration: NO

ECD7-ZB35 0.25PPMAR1242 24-FEB-2023 13:18, 2ul



ZB-35 Manual Integration: NO

Analytical Resources Inc.
Dual Column 608/8082 PCB Quantitation Report

Data file 1: /230224.b/02242309ECD7.D
Data file 2: /230224.b/230224.b/02242309ECD7.D
Method: \\target\share\chem4\ecd7.i\230224.b\PCB.m
Compound Sublist: AR1248.sub
Instrument, Inj. Vol.: ecd7.i, 2ul
Quant Method: Internal Std

ARI ID: 0.25PPMAR1248
Client ID:
Injection Date: 24-FEB-2023 13:39
Report Date: 02/28/2023 09:51
Matrix: NONE
Dilution Factor: 1.0

SURROGATES

ZB5 Col RT	ZB5 Col Shift	ZB5 Col Response	ZB35 Col RT	ZB35 Col Shift	ZB35 Col Response	ZB5 on col	ZB35 on col	RPD	Compound/Flag
5.809	0.003	349513	5.688	0.003	176615	36.6	37.9	3.4	Tetrachloro-m-xylene
13.894	0.001	523008	14.121	0.001	322054	36.4	39.3	7.5	Decachlorobiphenyl

* Indicates RPD > 40%

INTERNAL STANDARD SUMMARY

Column 1

Standard Cpnd	Standard Area*	Sample Area	%D
Bromo-Nitrobenzene	673778	639911	-5.0
Hexabromobiphenyl	1429847	1458696	2.0

Column 2

Standard Cpnd	Standard Area*	Sample Area	%D
Bromo-Nitrobenzene	315256	317938	0.9
Hexabromobiphenyl	513946	538760	4.8

* Standard Areas taken from Initial Cal Level 3
Initial Calibration Date: 24-FEB-2023
<- Indicates standard response outside Limits (-50 to +100%)

	ZB5 Col					ZB35 Col				
Aroclor	Peak#	RT	Shift	Area	Amount	Peak#	RT	Shift	Area	Amount
Aroclor-1248	1	8.405	0.000	78055	250.0	1	8.308	0.000	37951	250.0
Aroclor-1248	2	8.580	0.000	99216	250.0	2	8.714	0.000	39239	250.0
Aroclor-1248	3	8.999	0.000	187178	250.0	3	9.166	0.000	45157	250.0
Aroclor-1248	4	9.295	0.000	95291	250.0	4	9.590	0.000	54216	250.0

Total Col1Ave (4 peaks): 250.0 Total Col2Ave (4 peaks): 250.0 RPD = 0

Corrected Ave (3 peaks): 250.0 Corrected Ave (3 peaks): 250.0 RPD = 0

Total PCB Area Col1 (5.906 - 13.793) = 1565180 Col1 Total PCB = 0.2 ppm*

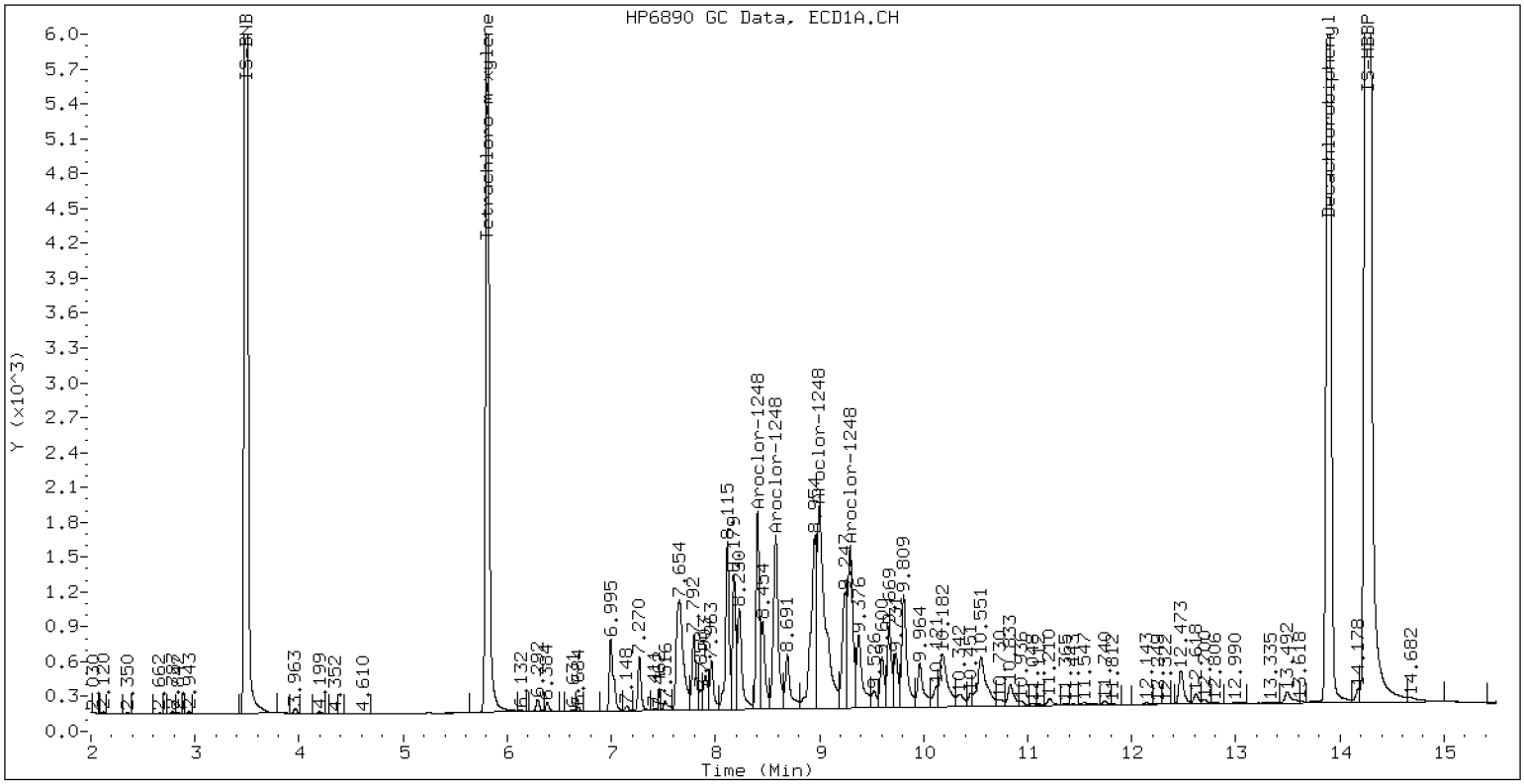
Total PCB Area Col2 (5.785 - 14.019) = 754991 Col2 Total PCB = 0.2 ppm*

* Quantitated against AR1660 0.25ppm in Ical

PCB-Form 10 Mod.

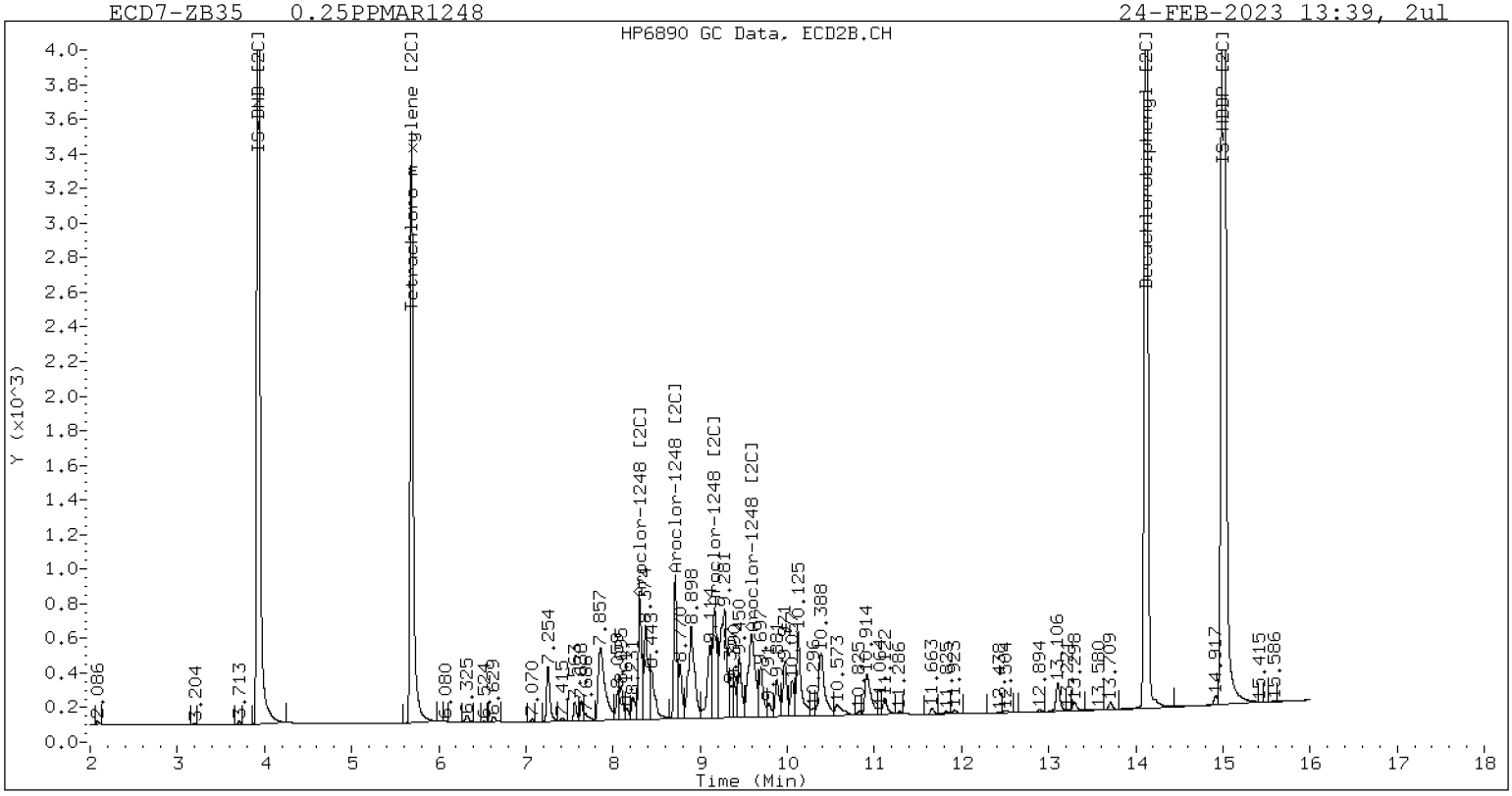
PCB Dual Column Chromatograms

ECD7-ZB5 0.25PPMAR1248 24-FEB-2023 13:39, 2ul



ZB-5 Manual Integration: NO

ECD7-ZB35 0.25PPMAR1248 24-FEB-2023 13:39, 2ul



ZB-35 Manual Integration: NO

Analytical Resources Inc.
Dual Column 608/8082 PCB Quantitation Report

Data file 1: /230224.b/02242310ECD7.D
Data file 2: /230224.b/230224.b/02242310ECD7.D
Method: \\target\share\chem4\ecd7.i\230224.b\PCB.m
Compound Sublist: AR1254.sub
Instrument, Inj. Vol.: ecd7.i, 2ul
Quant Method: Internal Std

ARI ID: 0.25PPMAR1254
Client ID:
Injection Date: 24-FEB-2023 14:00
Report Date: 02/28/2023 09:51
Matrix: NONE
Dilution Factor: 1.0

SURROGATES

ZB5 Col RT	ZB5 Col Shift	ZB5 Col Response	ZB35 Col RT	ZB35 Col Shift	ZB35 Col Response	ZB5 on col	ZB35 on col	RPD	Compound/Flag
5.808	0.002	352587	5.687	0.002	177502	37.3	38.6	3.4	Tetrachloro-m-xylene
13.895	0.002	532500	14.119	0.000	325903	37.0	40.2	8.2	Decachlorobiphenyl

* Indicates RPD > 40%

INTERNAL STANDARD SUMMARY

Column 1

Standard Cpnd	Standard Area*	Sample Area	%D
Bromo-Nitrobenzene	673778	633407	-6.0
Hexabromobiphenyl	1429847	1460265	2.1

Column 2

Standard Cpnd	Standard Area*	Sample Area	%D
Bromo-Nitrobenzene	315256	313673	-0.5
Hexabromobiphenyl	513946	532442	3.6

* Standard Areas taken from Initial Cal Level 3
Initial Calibration Date: 24-FEB-2023
<- Indicates standard response outside Limits (-50 to +100%)

	ZB5 Col					ZB35 Col				
Aroclor	Peak#	RT	Shift	Area	Amount	Peak#	RT	Shift	Area	Amount
Aroclor-1254	1	9.299	0.000	159011	250.0	1	9.449	0.000	59603	250.0
Aroclor-1254	2	9.377	0.000	71516	250.0	2	9.970	0.000	47949	250.0
Aroclor-1254	3	9.668	0.000	102230	250.0	3	10.124	0.000	103745	250.0
Aroclor-1254	4	9.807	0.000	198777	250.0	4	10.373	0.000	101135	250.0
Aroclor-1254	5	10.176	0.000	124586	250.0	5	10.569	0.000	61577	250.0

Total Col1Ave (5 peaks): 250.0 Total Col2Ave (5 peaks): 250.0 RPD = 0

Corrected Ave (4 peaks): 250.0 Corrected Ave (4 peaks): 250.0 RPD = 0

Total PCB Area Col1 (5.906 - 13.793) = 2179224 Col1 Total PCB = 0.3 ppm*

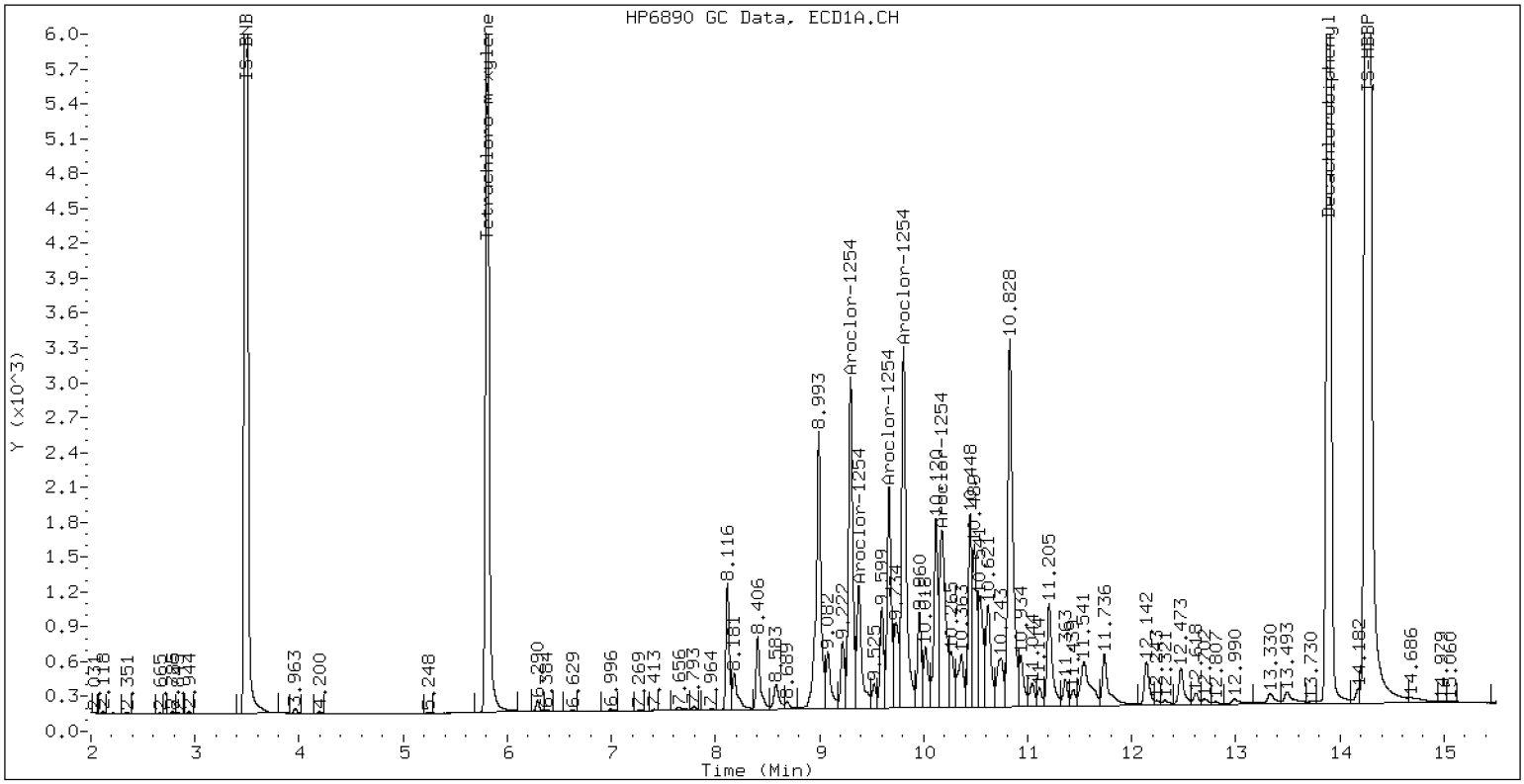
Total PCB Area Col2 (5.785 - 14.019) = 1022156 Col2 Total PCB = 0.3 ppm*

* Quantitated against AR1660 0.25ppm in Ical

PCB-Form 10 Mod.

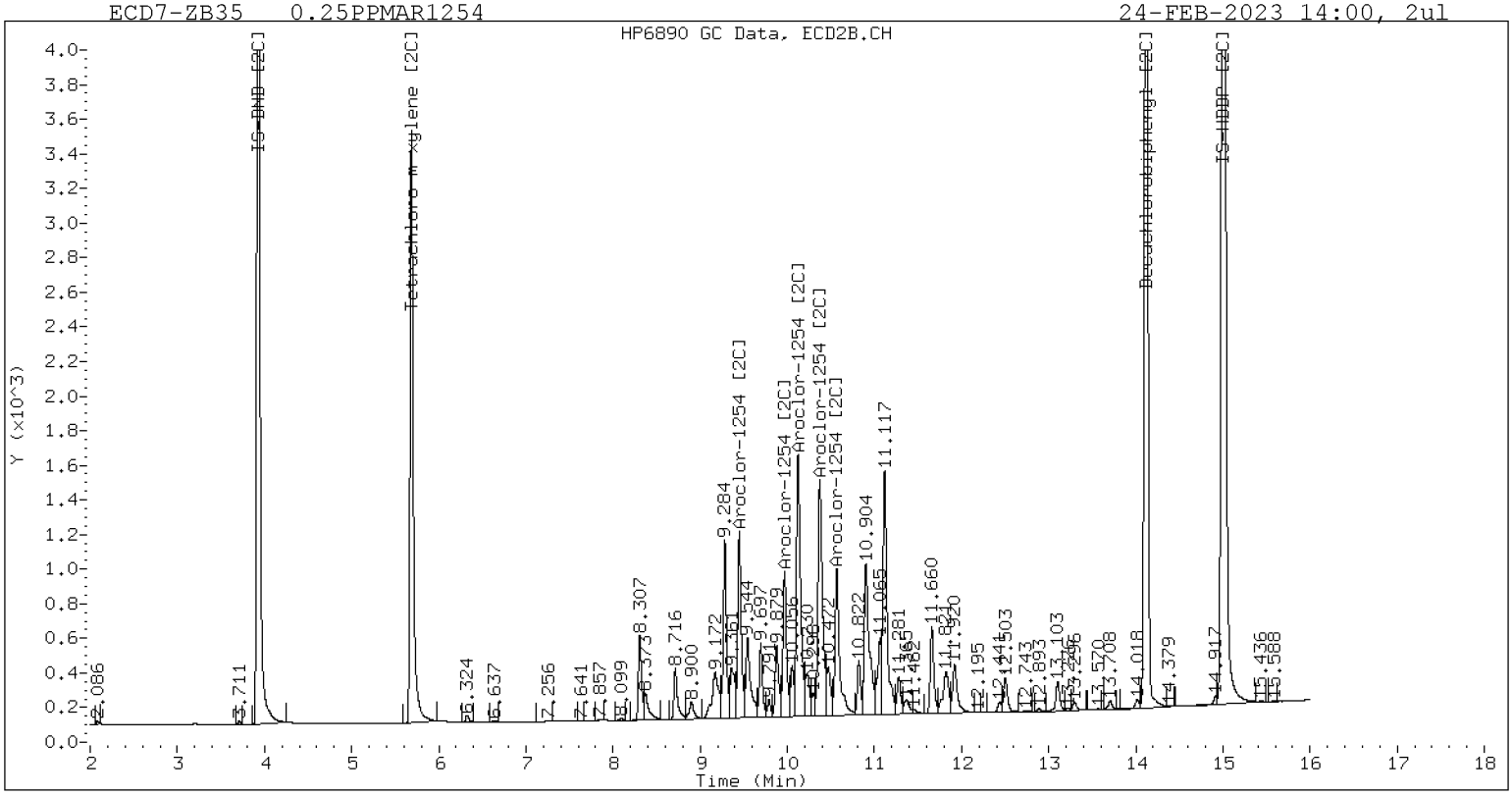
PCB Dual Column Chromatograms

ECD7-ZB5 0.25PPMAR1254 24-FEB-2023 14:00, 2ul



ZB-5 Manual Integration: NO

ECD7-ZB35 0.25PPMAR1254 24-FEB-2023 14:00, 2ul



ZB-35 Manual Integration: NO

Analytical Resources Inc.
Dual Column 608/8082 PCB Quantitation Report

Data file 1: /230224.b/02242311ECD7.D
Data file 2: /230224.b/230224.b/02242311ECD7.D
Method: \\target\share\chem4\ecd7.i\230224.b\PCB.m
Compound Sublist: AR2162.sub
Instrument, Inj. Vol.: ecd7.i, 2ul
Quant Method: Internal Std

ARI ID: 0.25PPMAR2162
Client ID:
Injection Date: 24-FEB-2023 14:21
Report Date: 02/28/2023 09:51
Matrix: NONE
Dilution Factor: 1.0

SURROGATES

ZB5 Col RT	ZB5 Col Shift	ZB5 Col Response	ZB35 Col RT	ZB35 Col Shift	ZB35 Col Response	ZB5 on col	ZB35 on col	RPD	Compound/Flag
5.807	0.001	362236	5.686	0.000	177349	38.4	39.2	2.1	Tetrachloro-m-xylene
13.894	0.001	523254	14.119	-0.000	321034	36.0	39.2	8.3	Decachlorobiphenyl

* Indicates RPD > 40%

INTERNAL STANDARD SUMMARY

Column 1

Standard Cpnd	Standard Area*	Sample Area	%D
Bromo-Nitrobenzene	673778	632433	-6.1
Hexabromobiphenyl	1429847	1474039	3.1

Column 2

Standard Cpnd	Standard Area*	Sample Area	%D
Bromo-Nitrobenzene	315256	308453	-2.2
Hexabromobiphenyl	513946	538177	4.7

* Standard Areas taken from Initial Cal Level 3
Initial Calibration Date: 24-FEB-2023
<- Indicates standard response outside Limits (-50 to +100%)

	ZB5 Col					ZB35 Col				
Aroclor	Peak#	RT	Shift	Area	Amount	Peak#	RT	Shift	Area	Amount
Aroclor-1221	1	4.731	0.000	14160	250.0	1	4.956	0.000	7300	250.0
Aroclor-1221	2	6.132	0.000	25324	250.0	2	6.296	0.000	13816	250.0
Aroclor-1221	3	6.382	0.000	58795	250.0	3	6.622	0.000	22491	250.0

Total Col1Ave (3 peaks): 250.0 Total Col2Ave (3 peaks): 250.0 RPD = 0
Corrected Ave: < 3 Peaks Corrected Ave: < 3 Peaks

Aroclor-1262	1	10.829	0.000	113046	250.0	1	11.200	0.000	114880	250.0
Aroclor-1262	2	12.244	0.000	183948	250.0	2	11.652	0.000	97844	250.0
Aroclor-1262	3	12.319	0.000	197749	250.0	3	12.434	0.000	111015	250.0
Aroclor-1262	4	12.987	0.000	180727	250.0	4	12.502	0.000	173913	250.0

Total Col1Ave (4 peaks): 250.0 Total Col2Ave (4 peaks): 250.0 RPD = 0
Corrected Ave (3 peaks): 250.0 Corrected Ave (3 peaks): 250.0 RPD = 0

Total PCB Area Col1 (5.906 - 13.793) = 3105316 Col1 Total PCB = 0.4 ppm*

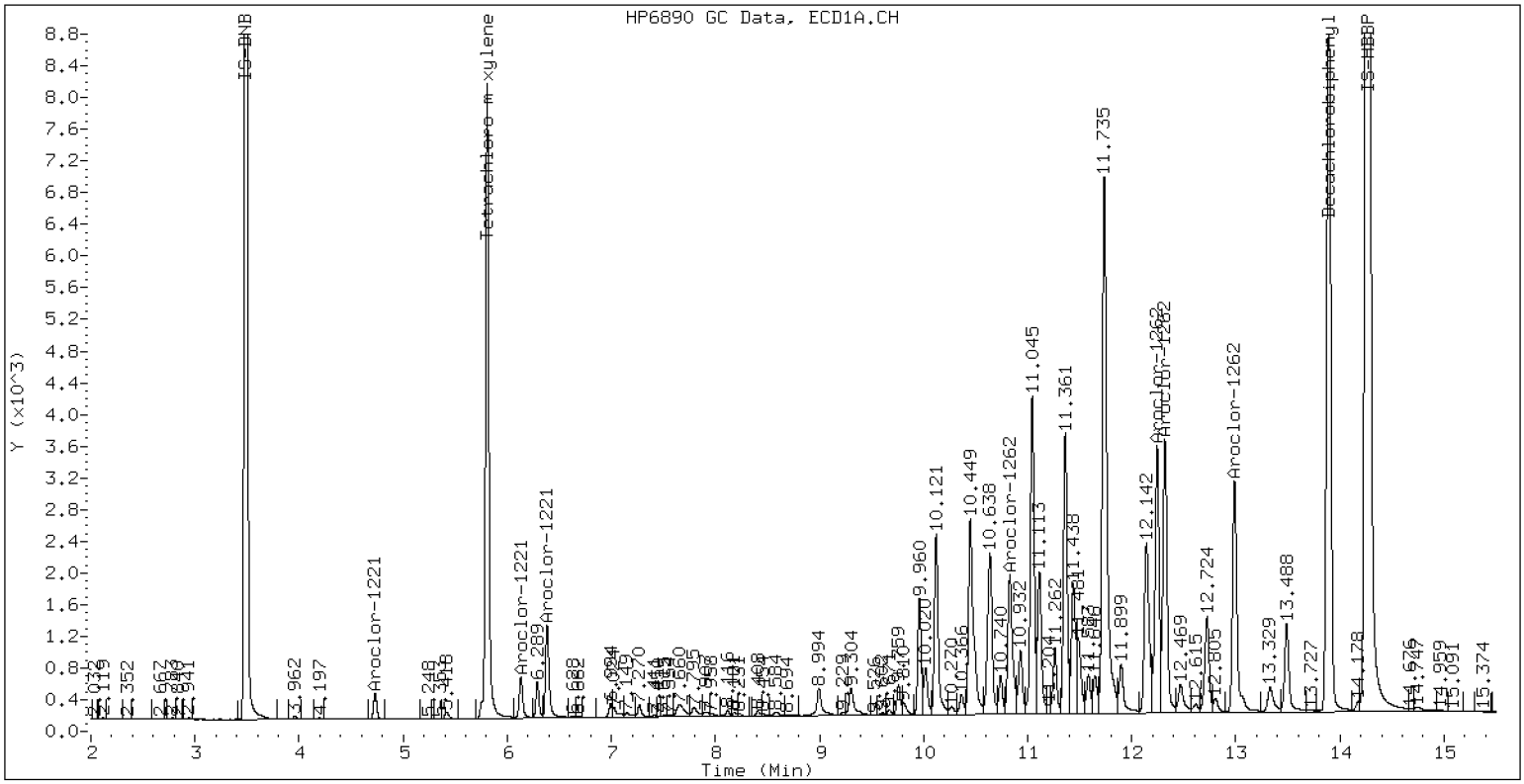
Total PCB Area Col2 (5.785 - 14.019) = 1573107 Col2 Total PCB = 0.4 ppm*

* Quantitated against AR1660 0.25ppm in Ical

PCB-Form 10 Mod.

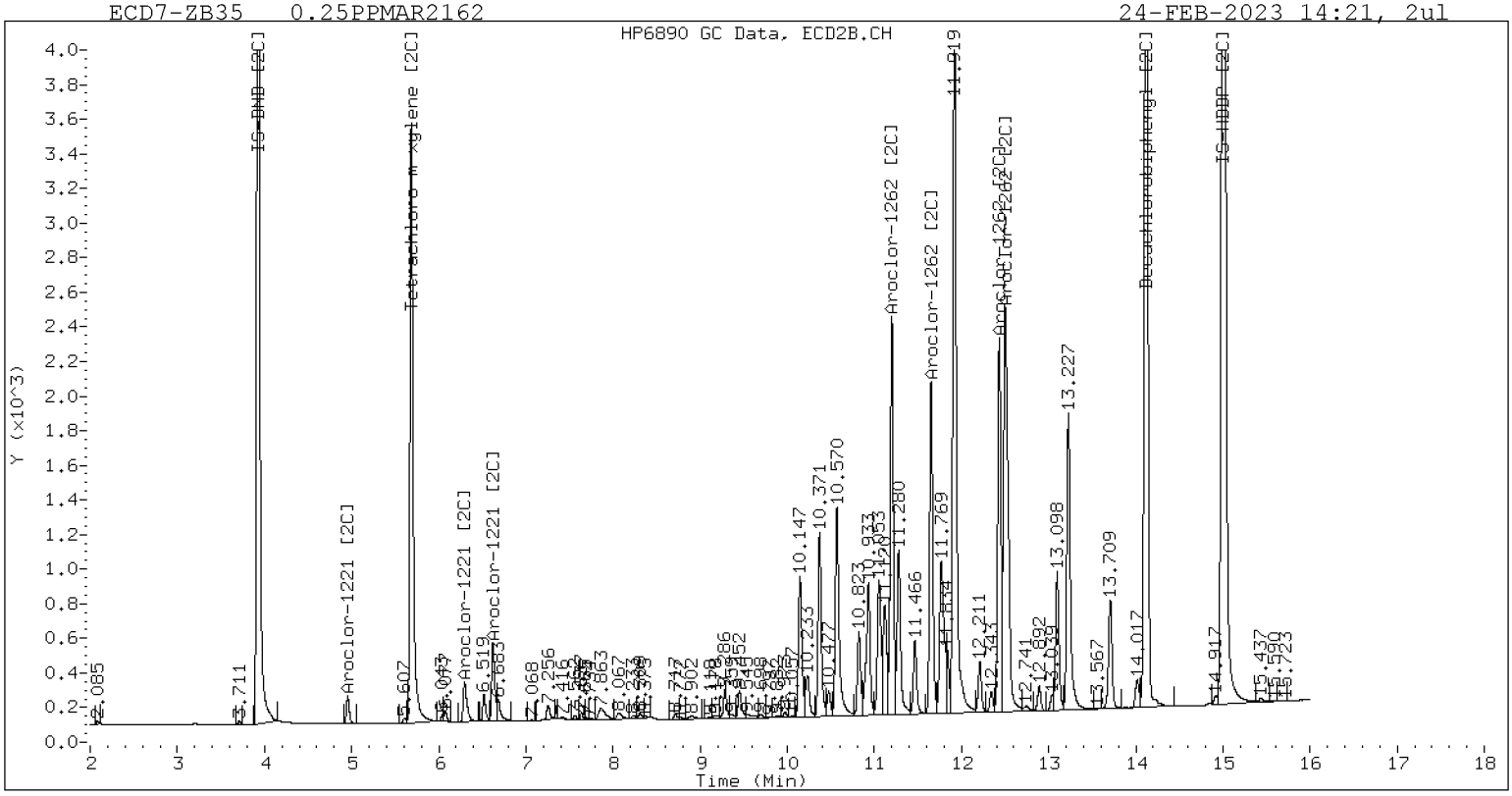
PCB Dual Column Chromatograms

ECD7-ZB5 0.25PPMAR2162 24-FEB-2023 14:21, 2ul



ZB-5 Manual Integration: NO

ECD7-ZB35 0.25PPMAR2162 24-FEB-2023 14:21, 2ul



ZB-35 Manual Integration: NO

Analytical Resources Inc.
Dual Column 608/8082 PCB Quantitation Report

Data file 1: /230224.b/02242312ECD7.D
Data file 2: /230224.b/230224.b/02242312ECD7.D
Method: \\target\share\chem4\ecd7.i\230224.b\PCB.m
Compound Sublist: AR3268.sub
Instrument, Inj. Vol.: ecd7.i, 2ul
Quant Method: Internal Std

ARI ID: 0.25PPMAR3268
Client ID:
Injection Date: 24-FEB-2023 14:42
Report Date: 02/28/2023 09:51
Matrix: NONE
Dilution Factor: 1.0

SURROGATES

ZB5 Col RT	ZB5 Col Shift	ZB5 Col Response	ZB35 Col RT	ZB35 Col Shift	ZB35 Col Response	ZB5 on col	ZB35 on col	RPD	Compound/Flag
5.806	0.000	366416	5.685	0.000	179450	38.0	38.9	2.4	Tetrachloro-m-xylene
13.893	0.000	778191	14.119	0.000	477889	53.0	57.5	8.3	Decachlorobiphenyl

* Indicates RPD > 40%

INTERNAL STANDARD SUMMARY

Column 1

Standard Cpnd	Standard Area*	Sample Area	%D
Bromo-Nitrobenzene	673778	645602	-4.2
Hexabromobiphenyl	1429847	1492154	4.4

Column 2

Standard Cpnd	Standard Area*	Sample Area	%D
Bromo-Nitrobenzene	315256	314042	-0.4
Hexabromobiphenyl	513946	545458	6.1

* Standard Areas taken from Initial Cal Level 3
Initial Calibration Date: 24-FEB-2023
<- Indicates standard response outside Limits (-50 to +100%)

	ZB5 Col					ZB35 Col				
Aroclor	Peak#	RT	Shift	Area	Amount	Peak#	RT	Shift	Area	Amount
Aroclor-1232	1	4.730	0.000	8647	250.0	1	4.956	0.000	4017	250.0
Aroclor-1232	2	6.131	0.000	17148	250.0	2	7.254	0.000	19962	250.0
Aroclor-1232	3	7.656	0.000	77627	250.0	3	7.861	0.000	39913	250.0
Aroclor-1232	4	8.581	0.000	32993	250.0	4	8.715	0.000	11487	250.0
Total Col1Ave (4 peaks):					250.0	Total Col2Ave (4 peaks):				250.0 RPD = 0
Corrected Ave (3 peaks):					250.0	Corrected Ave (3 peaks):				250.0 RPD = 0
Aroclor-1268	1	12.247	0.000	477974	250.0	1	12.432	0.000	274595	250.0
Aroclor-1268	2	12.317	0.000	473326	250.0	2	12.500	0.000	295194	250.0
Aroclor-1268	3	12.699	0.000	405011	250.0	3	12.892	0.000	252048	250.0
Aroclor-1268	4	13.490	0.000	1333528	250.0	4	13.709	0.000	805579	250.0
Total Col1Ave (4 peaks):					250.0	Total Col2Ave (4 peaks):				250.0 RPD = 0
Corrected Ave (3 peaks):					250.0	Corrected Ave (3 peaks):				250.0 RPD = 0

Total PCB Area Col1 (5.906 - 13.793) = 3998414 Col1 Total PCB = 0.5 ppm*

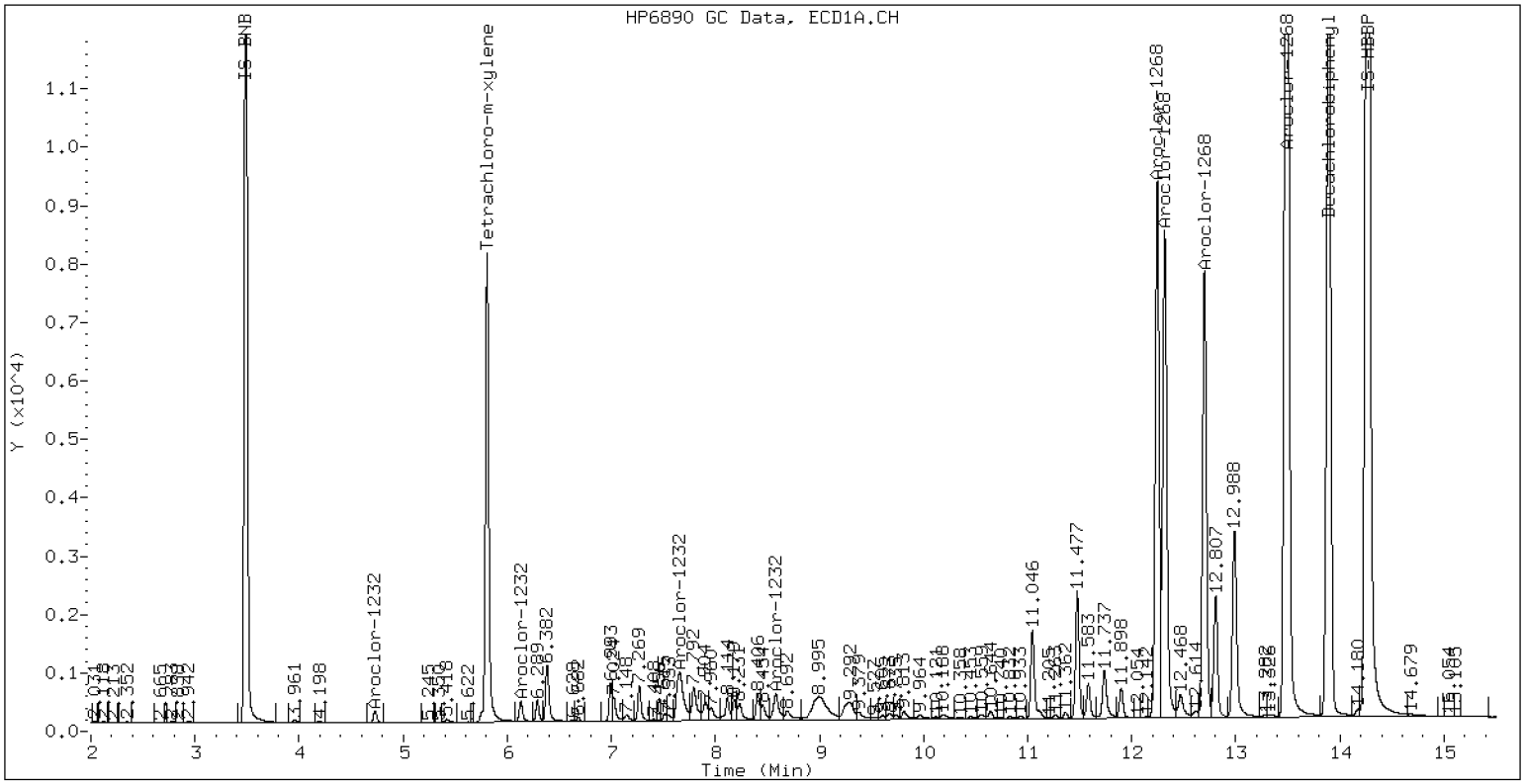
Total PCB Area Col2 (5.785 - 14.019) = 2300029 Col2 Total PCB = 0.6 ppm*

* Quantitated against AR1660 0.25ppm in Ical

PCB-Form 10 Mod.

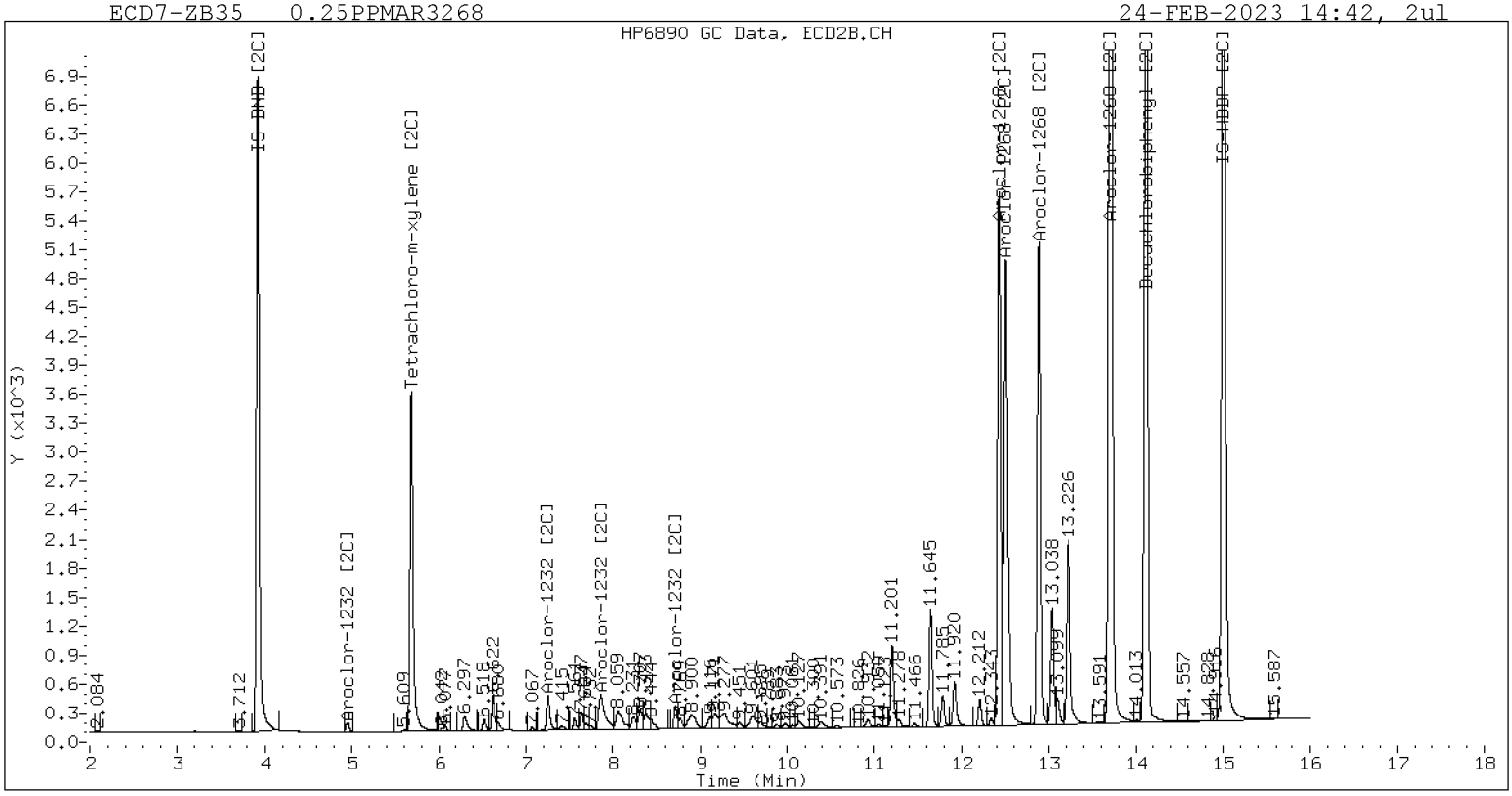
PCB Dual Column Chromatograms

ECD7-ZB5 0.25PPMAR3268 24-FEB-2023 14:42, 2ul



ZB-5 Manual Integration: NO

ECD7-ZB35 0.25PPMAR3268 24-FEB-2023 14:42, 2ul



ZB-35 Manual Integration: NO

Analytical Resources Inc.
Dual Column 608/8082 PCB Quantitation Report

Data file 1: /230224.b/02242313ECD7.D
Data file 2: /230224.b/230224.b/02242313ECD7.D
Method: \\target\share\chem4\ecd7.i\230224.b\PCB.m
Compound Sublist: PCB.sub
Instrument, Inj. Vol.: ecd7.i, 2ul
Quant Method: Internal Std

ARI ID: AR1660SCV
Client ID:
Injection Date: 24-FEB-2023 15:03
Report Date: 02/28/2023 09:51
Matrix: NONE
Dilution Factor: 1.0

SURROGATES

ZB5 Col RT	ZB5 Col Shift	ZB5 Col Response	ZB35 Col RT	ZB35 Col Shift	ZB35 Col Response	ZB5 on col	ZB35 on col	RPD	Compound/Flag
5.807	0.001	337070	5.686	0.001	165848	34.9	35.8	2.3	Tetrachloro-m-xylene
13.895	0.002	515407	14.119	-0.000	316730	34.3	37.3	8.4	Decachlorobiphenyl

* Indicates RPD > 40%

INTERNAL STANDARD SUMMARY

Column 1

Standard Cpnd	Standard Area*	Sample Area	%D
Bromo-Nitrobenzene	673778	645975	-4.1
Hexabromobiphenyl	1429847	1524245	6.6

Column 2

Standard Cpnd	Standard Area*	Sample Area	%D
Bromo-Nitrobenzene	315256	316115	0.3
Hexabromobiphenyl	513946	556950	8.4

* Standard Areas taken from Initial Cal Level 3
Initial Calibration Date: 24-FEB-2023
<- Indicates standard response outside Limits (-50 to +100%)

	ZB5 Col					ZB35 Col				
Aroclor	Peak#	RT	Shift	Area	Amount	Peak#	RT	Shift	Area	Amount
Aroclor-1016	1	7.269	-0.002	59491	242.5	1	7.254	-0.002	44576	240.9
Aroclor-1016	2	7.655	0.001	181090	242.1	2	7.857	0.002	95386	254.2
Aroclor-1016	3	7.790	0.000	88470	242.3	3	8.056	0.002	42160	248.8
Aroclor-1016	4	8.404	-0.001	57980	245.6	4	8.307	0.000	32197	242.1
Total Col1Ave (4 peaks):				243.1		Total Col2Ave (4 peaks):			246.5	RPD = 1
Corrected Ave (3 peaks):				242.3		Corrected Ave (3 peaks):			243.9	RPD = 1
Aroclor-1221	1	4.731	0.000	464	8.0	1	---			0.0
Aroclor-1221	2	6.130	-0.002	9233	89.2	2	6.300	0.004	5379	95.0
Aroclor-1221	3	6.382	-0.001	42570	177.2	3	6.623	0.001	20952	227.2
Total Col1Ave (3 peaks):				91.5		Col2Ave: <3 Quant Peaks				
Aroclor-1232	1	4.731	0.001	464	13.4	1	---			0.0
Aroclor-1232	2	6.130	-0.001	9233	134.5	2	7.254	-0.000	44576	554.6
Aroclor-1232	3	7.655	-0.001	181090	582.9	3	7.857	-0.003	95386	593.5
Aroclor-1232	4	8.580	-0.001	79916	605.2	4	8.713	-0.002	29795	644.2
Total Col1Ave (4 peaks):				334.0		Total Col2Ave (3 peaks):			597.4	RPD = 57*
Corrected Ave (3 peaks):				243.6		Corrected Ave: < 3 Peaks				
Aroclor-1242	1	7.269	-0.002	59491	297.2	1	7.254	-0.002	44576	303.5
Aroclor-1242	2	7.655	-0.001	181090	297.9	2	7.857	-0.000	95386	309.0
Aroclor-1242	3	8.404	-0.001	57980	306.5	3	9.115	-0.052	18754	195.2
Aroclor-1242	4	8.580	0.000	79916	285.8	4	9.697	0.100	1355	11.6
Total Col1Ave (4 peaks):				296.8		Total Col2Ave (4 peaks):			204.8	RPD = 37
Corrected Ave (3 peaks):				293.6		Corrected Ave (3 peaks):			170.1	RPD = 53*
Aroclor-1248	1	8.404	-0.001	57980	184.0	1	8.307	-0.001	32197	213.3
Aroclor-1248	2	8.580	-0.001	79916	199.5	2	8.713	-0.001	29795	190.9
Aroclor-1248	3	8.993	-0.006	71805	95.0	3	9.115	-0.050	18754	104.4
Aroclor-1248	4	9.300	0.006	47348	123.1	4	---			0.0
Total Col1Ave (4 peaks):				150.4		Total Col2Ave (3 peaks):			169.6	RPD = 12
Corrected Ave (3 peaks):				134.0		Corrected Ave: < 3 Peaks				
Aroclor-1254	1	9.300	0.002	47348	73.0	1	9.451	0.001	22438	93.4
Aroclor-1254	2	---			0.0	2	9.972	0.001	2694	13.9
Aroclor-1254	3	9.670	0.002	5461	13.1	3	10.147	0.024	52914	126.5
Aroclor-1254	4	9.807	-0.000	18944	23.4	4	10.370	-0.003	70430	172.8
Aroclor-1254	5	10.121	-0.056	154170	303.3	5	10.568	-0.000	98525	396.9
Total Col1Ave (4 peaks):				103.2		Total Col2Ave (5 peaks):			160.7	RPD = 44*
Corrected Ave (3 peaks):				36.5		Corrected Ave (4 peaks):			101.7	RPD = 94*
Aroclor-1260	1	11.044	0.000	149195	272.1	1	11.653	0.000	82210	251.0
Aroclor-1260	2	11.361	-0.000	153832	268.5	2	11.919	0.001	222226	265.9
Aroclor-1260	3	11.736	0.002	396660	261.0	3	12.435	-0.000	59148	266.7
Aroclor-1260	4	12.140	0.001	190448	248.9	4	12.504	0.002	147180	261.2
Aroclor-1260	5	12.244	-0.000	91385	277.5	NS	---			----
Total Col1Ave (5 peaks):				265.6		Total Col2Ave (4 peaks):			261.2	RPD = 2
Corrected Ave (4 peaks):				262.6		Corrected Ave (3 peaks):			259.4	RPD = 1
Aroclor-1262	1	10.827	-0.002	220238	471.0	1	11.199	-0.001	84479	177.6
Aroclor-1262	2	12.244	0.000	91385	120.1	2	11.653	0.002	82210	203.0
Aroclor-1262	3	12.320	0.001	113066	138.2	3	12.435	0.002	59148	128.7
Aroclor-1262	4	12.988	0.001	102156	136.7	4	12.504	0.002	147180	204.4
Total Col1Ave (4 peaks):				216.5		Total Col2Ave (4 peaks):			178.4	RPD = 19
Corrected Ave (3 peaks):				131.7		Corrected Ave (3 peaks):			169.8	RPD = 25
Aroclor-1268	1	12.244	-0.003	91385	46.8	1	12.435	0.003	59148	52.7
Aroclor-1268	2	12.320	0.003	113066	58.5	2	12.504	0.004	147180	122.1
Aroclor-1268	3	12.726	0.027	46633	28.2	3	12.893	0.001	2874	2.8
Aroclor-1268	4	13.489	-0.000	25567	4.7	4	13.709	-0.000	13041	4.0
Total Col1Ave (4 peaks):				34.5		Total Col2Ave (4 peaks):			45.4	RPD = 27
Corrected Ave (3 peaks):				26.6		Corrected Ave (3 peaks):			19.8	RPD = 29

Total PCB Area Col1 (5.906 - 13.793) = 3743076 Col1 Total PCB = 0.5 ppm*

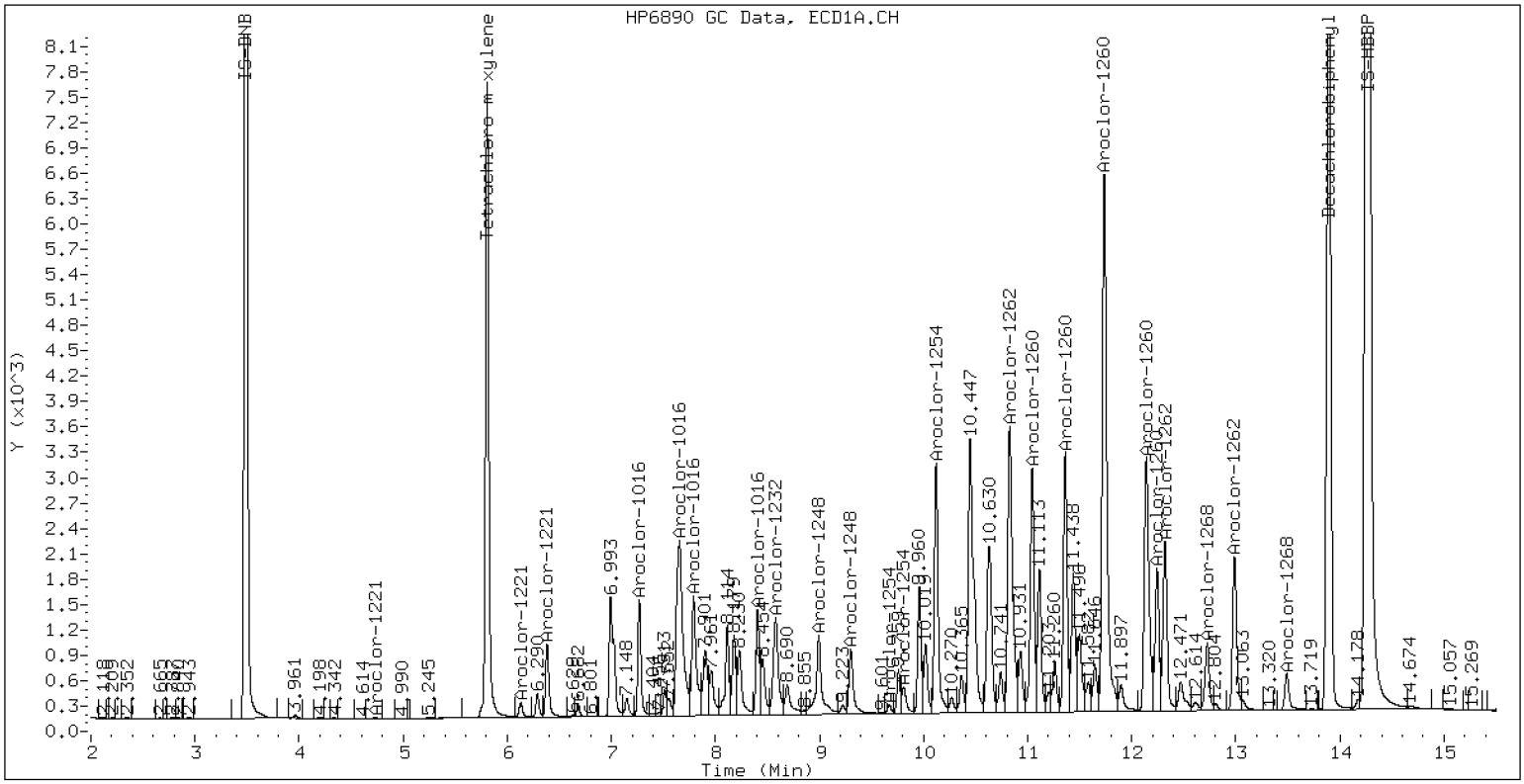
Total PCB Area Col2 (5.785 - 14.019) = 1897008 Col2 Total PCB = 0.5 ppm*

* Quantitated against AR1660 0.25ppm in Ical

PCB-Form 10 Mod.

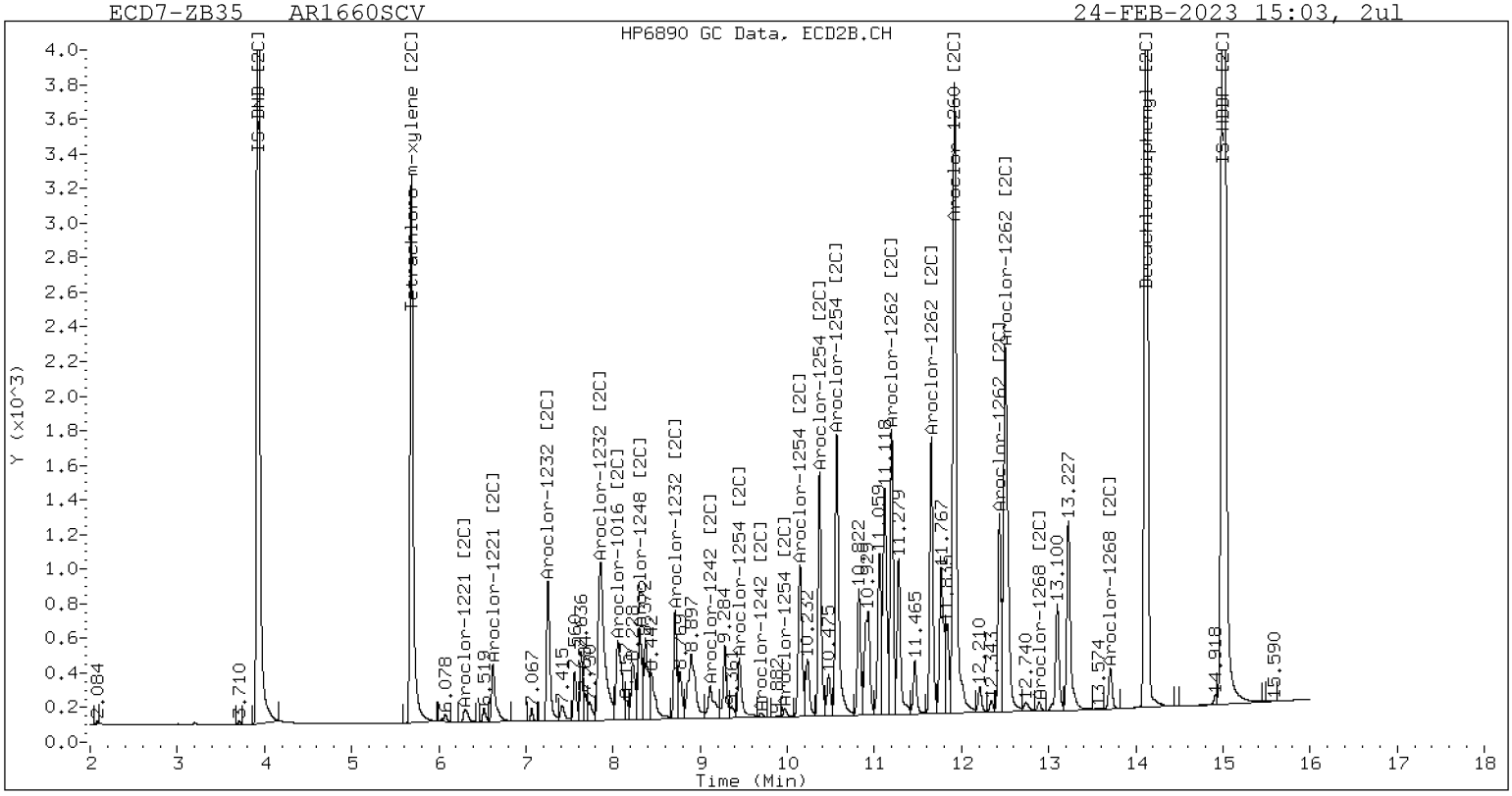
PCB Dual Column Chromatograms

ECD7-ZB5 AR1660SCV 24-FEB-2023 15:03, 2ul



ZB-5 Manual Integration: NO

ECD7-ZB35 AR1660SCV 24-FEB-2023 15:03, 2ul



ZB-35 Manual Integration: NO

Analytical Resources Inc.
Dual Column 608/8082 PCB Quantitation Report

Data file 1: /230224.b/02242314ECD7.D
Data file 2: /230224.b/230224.b/02242314ECD7.D
Method: \\target\share\chem4\ecd7.i\230224.b\PCB.m
Compound Sublist: PCB.sub
Instrument, Inj. Vol.: ecd7.i, 2ul
Quant Method: Internal Std

ARI ID: AR1242SCV
Client ID:
Injection Date: 24-FEB-2023 15:24
Report Date: 02/28/2023 09:51
Matrix: NONE
Dilution Factor: 1.0

SURROGATES

ZB5 Col RT	ZB5 Col Shift	ZB5 Col Response	ZB35 Col RT	ZB35 Col Shift	ZB35 Col Response	ZB5 on col	ZB35 on col	RPD	Compound/Flag
5.808	0.002	354283	5.686	0.001	172455	33.6	34.5	2.6	Tetrachloro-m-xylene
13.895	0.002	567088	14.120	0.001	347430	37.0	40.3	8.6	Decachlorobiphenyl

* Indicates RPD > 40%

INTERNAL STANDARD SUMMARY

Column 1

Standard Cpnd	Standard Area*	Sample Area	%D
Bromo-Nitrobenzene	673778	705650	4.7
Hexabromobiphenyl	1429847	1555683	8.8

Column 2

Standard Cpnd	Standard Area*	Sample Area	%D
Bromo-Nitrobenzene	315256	340433	8.0
Hexabromobiphenyl	513946	565609	10.1

* Standard Areas taken from Initial Cal Level 3
Initial Calibration Date: 24-FEB-2023
<- Indicates standard response outside Limits (-50 to +100%)

	ZB5 Col					ZB35 Col				
Aroclor	Peak#	RT	Shift	Area	Amount	Peak#	RT	Shift	Area	Amount
Aroclor-1016	1	7.270	-0.000	39927	149.0	1	7.256	0.000	32417	162.7
Aroclor-1016	2	7.653	-0.001	132339	162.0	2	7.856	0.001	69235	171.3
Aroclor-1016	3	7.791	0.001	59310	148.7	3	8.055	0.000	29473	161.5
Aroclor-1016	4	8.405	0.000	42537	165.0	4	8.307	-0.000	22792	159.2
Total Col1Ave (4 peaks):				156.2		Total Col2Ave (4 peaks):			163.7	RPD = 5
Corrected Ave (3 peaks):				153.2		Corrected Ave (3 peaks):			161.1	RPD = 5
Aroclor-1221	1	4.733	0.002	319	5.0	1	---			0.0
Aroclor-1221	2	6.131	-0.001	6534	57.8	2	6.319	0.022	4365	71.6
Aroclor-1221	3	6.384	0.001	29664	113.0	3	6.624	0.002	14916	150.2
Total Col1Ave (3 peaks):				58.6		Col2Ave: <3 Quant Peaks				
Aroclor-1232	1	4.733	0.003	319	8.4	1	---			0.0
Aroclor-1232	2	6.131	0.000	6534	87.2	2	7.256	0.002	32417	374.5
Aroclor-1232	3	7.653	-0.003	132339	389.9	3	7.856	-0.004	69235	400.0
Aroclor-1232	4	8.579	-0.002	69445	481.4	4	8.714	-0.001	22167	445.0
Total Col1Ave (4 peaks):				241.7		Total Col2Ave (3 peaks):			406.5	RPD = 51*
Corrected Ave (3 peaks):				161.8		Corrected Ave: < 3 Peaks				
Aroclor-1242	1	7.270	-0.001	39927	182.6	1	7.256	0.000	32417	205.0
Aroclor-1242	2	7.653	-0.003	132339	199.3	2	7.856	-0.002	69235	208.2
Aroclor-1242	3	8.405	-0.000	42537	205.9	3	9.164	-0.004	23068	223.0
Aroclor-1242	4	8.579	-0.000	69445	227.4	4	9.587	-0.010	31021	246.1
Total Col1Ave (4 peaks):				203.8		Total Col2Ave (4 peaks):			220.6	RPD = 8
Corrected Ave (3 peaks):				195.9		Corrected Ave (3 peaks):			212.1	RPD = 8
Aroclor-1248	1	8.405	0.000	42537	123.5	1	8.307	-0.001	22792	140.2
Aroclor-1248	2	8.579	-0.001	69445	158.7	2	8.714	-0.000	22167	131.9
Aroclor-1248	3	9.001	0.003	91942	111.4	3	9.164	-0.002	23068	119.3
Aroclor-1248	4	9.294	-0.000	38711	92.1	4	9.587	-0.003	31021	133.6
Total Col1Ave (4 peaks):				121.4		Total Col2Ave (4 peaks):			131.2	RPD = 8
Corrected Ave (3 peaks):				109.0		Corrected Ave (3 peaks):			128.3	RPD = 16
Aroclor-1254	1	9.294	-0.005	38711	54.6	1	9.450	0.001	13131	50.7
Aroclor-1254	2	9.377	-0.000	17371	54.5	2	9.970	0.000	8340	40.1
Aroclor-1254	3	9.668	-0.000	16373	35.9	3	10.123	-0.000	16364	36.3
Aroclor-1254	4	9.807	-0.001	27490	31.0	4	10.382	0.009	16062	36.6
Aroclor-1254	5	10.175	-0.001	20494	36.9	5	10.572	0.004	4818	18.0
Total Col1Ave (5 peaks):				42.6		Total Col2Ave (5 peaks):			36.4	RPD = 16
Corrected Ave (4 peaks):				39.6		Corrected Ave (4 peaks):			32.8	RPD = 19
Aroclor-1260	1	11.048	0.003	794	1.4	1	11.665	0.012	1652	5.0
Aroclor-1260	2	11.366	0.005	814	1.4	2	11.926	0.008	842	1.0
Aroclor-1260	3	11.739	0.006	1848	1.2	3	12.438	0.002	483	2.1
Aroclor-1260	4	12.145	0.006	1372	1.8	4	12.506	0.004	790	1.4
Aroclor-1260	5	---			0.0	NS	---			----
Total Col1Ave (4 peaks):				1.4		Total Col2Ave (4 peaks):			2.4	RPD = 49*
Corrected Ave (3 peaks):				1.3		Corrected Ave (3 peaks):			1.5	RPD = 12
Aroclor-1262	1	10.832	0.003	13157	27.6	1	11.121	-0.079	6113	12.7
Aroclor-1262	2	12.145	-0.098	1372	1.8	2	11.665	0.013	1652	4.0
Aroclor-1262	3	---			0.0	3	12.438	0.004	483	1.0
Aroclor-1262	4	13.038	0.051	842	1.1	4	12.506	0.004	790	1.1
Total Col1Ave (3 peaks):				10.1		Total Col2Ave (4 peaks):			4.7	RPD = 73*
Corrected Ave: < 3 Peaks						Corrected Ave (3 peaks):			2.0	
Aroclor-1268	1	---			0.0	1	12.438	0.006	483	0.4
Aroclor-1268	2	---			0.0	2	12.506	0.006	790	0.6
Aroclor-1268	3	12.617	-0.082	5851	3.5	3	12.899	0.007	491	0.5
Aroclor-1268	4	13.500	0.010	1745	0.3	4	13.714	0.005	379	0.1
Col1Ave: <3 Quant Peaks						Col2Ave:			0.4	

Total PCB Area Col1 (5.906 - 13.793) = 1149784 Col1 Total PCB = 0.1 ppm*

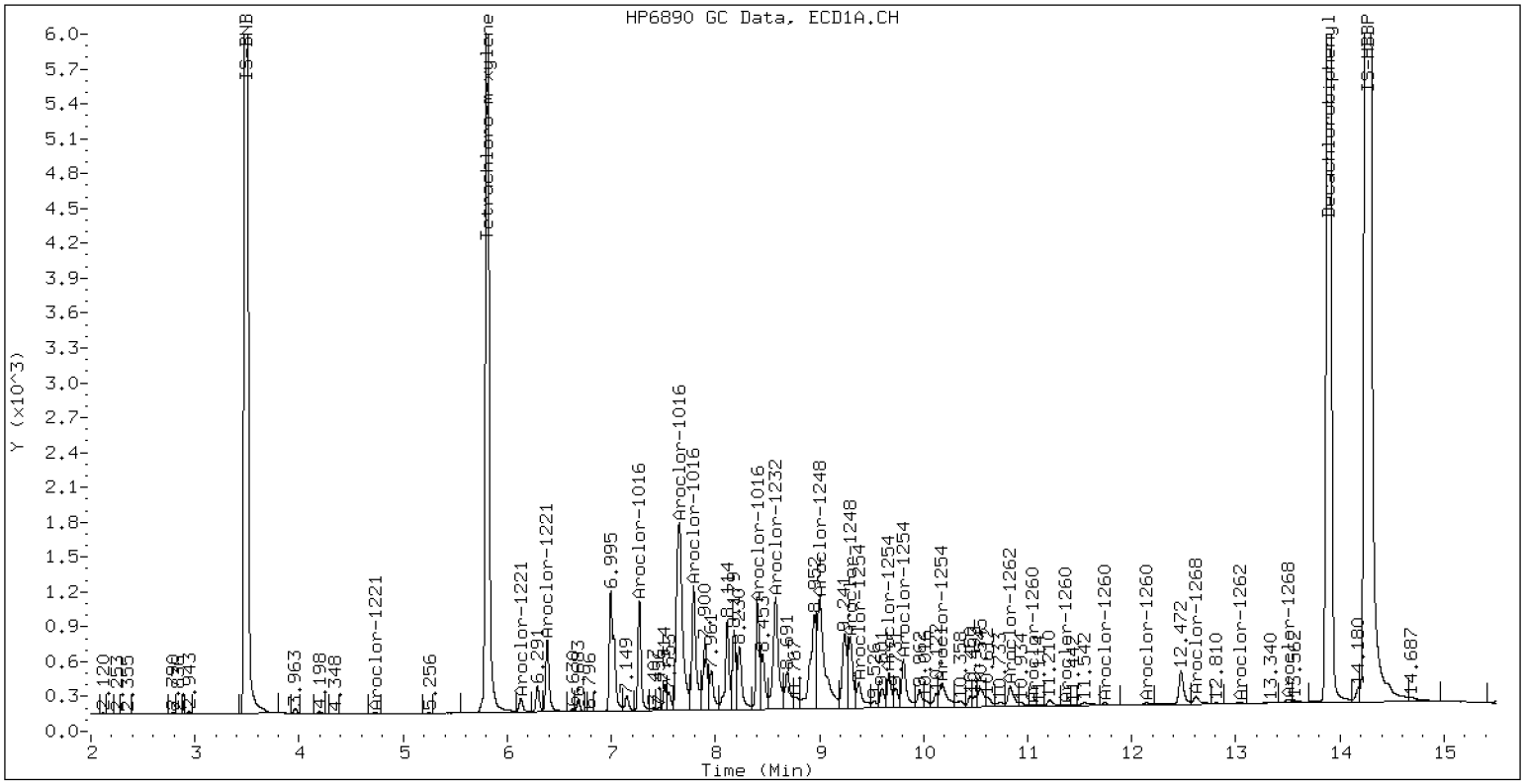
Total PCB Area Col2 (5.785 - 14.019) = 572210 Col2 Total PCB = 0.1 ppm*

* Quantitated against AR1660 0.25ppm in Ical

PCB-Form 10 Mod.

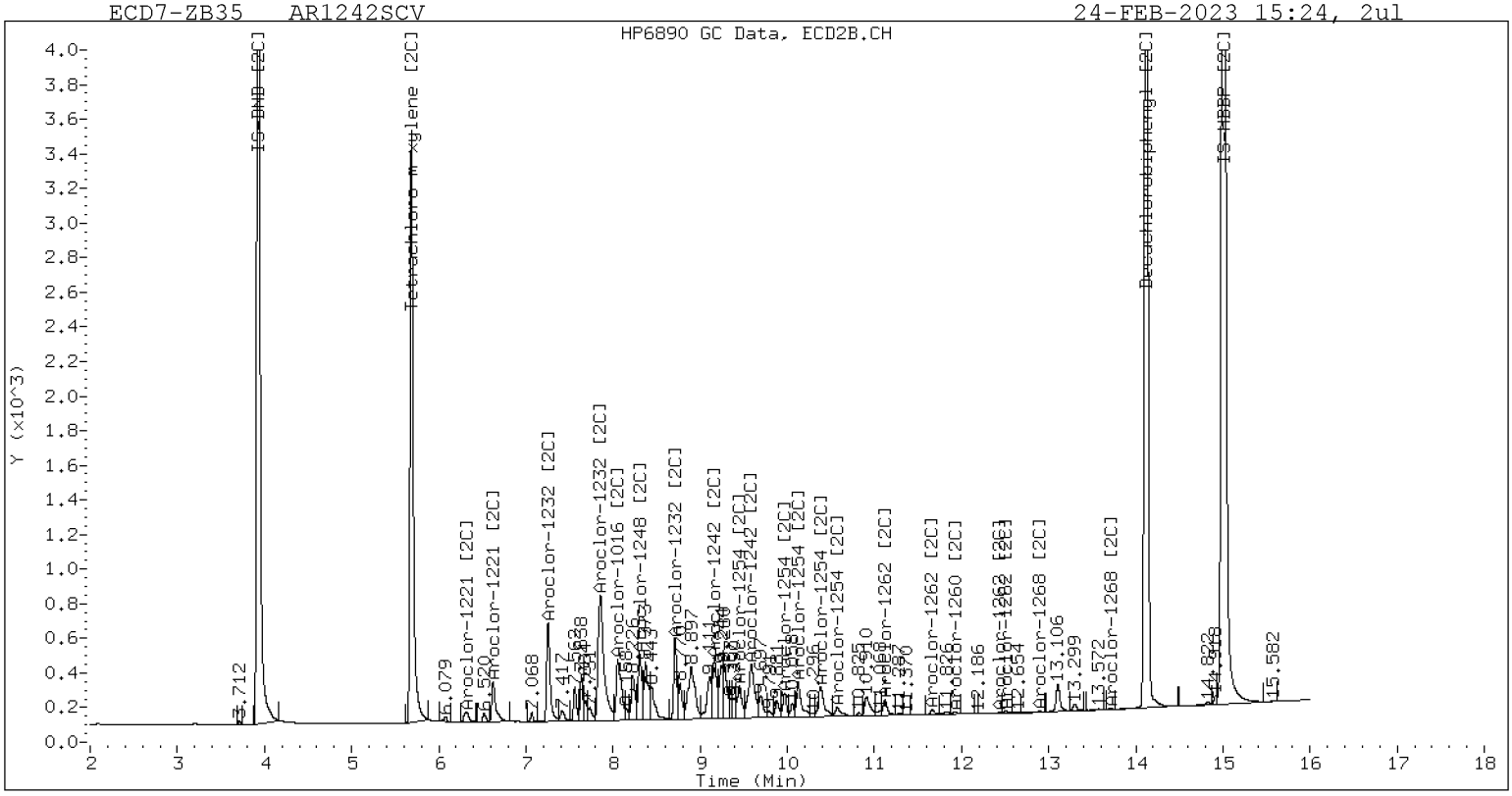
PCB Dual Column Chromatograms

ECD7-ZB5 AR1242SCV 24-FEB-2023 15:24, 2ul



ZB-5 Manual Integration: NO

ECD7-ZB35 AR1242SCV 24-FEB-2023 15:24, 2ul



ZB-35 Manual Integration: NO

Analytical Resources Inc.
Dual Column 608/8082 PCB Quantitation Report

Data file 1: /230224.b/02242315ECD7.D
Data file 2: /230224.b/230224.b/02242315ECD7.D
Method: \\target\share\chem4\ecd7.i\230224.b\PCB.m
Compound Sublist: PCB.sub
Instrument, Inj. Vol.: ecd7.i, 2ul
Quant Method: Internal Std

ARI ID: AR1248SCV
Client ID:
Injection Date: 24-FEB-2023 15:45
Report Date: 02/28/2023 09:51
Matrix: NONE
Dilution Factor: 1.0

SURROGATES

ZB5 Col RT	ZB5 Col Shift	ZB5 Col Response	ZB35 Col RT	ZB35 Col Shift	ZB35 Col Response	ZB5 on col	ZB35 on col	RPD	Compound/Flag
5.809	0.002	336655	5.687	0.002	168719	34.9	36.4	4.2	Tetrachloro-m-xylene
13.894	0.001	499162	14.118	-0.001	308317	33.1	36.3	9.2	Decachlorobiphenyl

* Indicates RPD > 40%

INTERNAL STANDARD SUMMARY

Column 1

Standard Cpnd	Standard Area*	Sample Area	%D
Bromo-Nitrobenzene	673778	646554	-4.0
Hexabromobiphenyl	1429847	1529451	7.0

Column 2

Standard Cpnd	Standard Area*	Sample Area	%D
Bromo-Nitrobenzene	315256	316066	0.3
Hexabromobiphenyl	513946	557213	8.4

* Standard Areas taken from Initial Cal Level 3
Initial Calibration Date: 24-FEB-2023
<- Indicates standard response outside Limits (-50 to +100%)

	ZB5 Col					ZB35 Col				
Aroclor	Peak#	RT	Shift	Area	Amount	Peak#	RT	Shift	Area	Amount
Aroclor-1016	1	7.271	0.000	19773	80.5	1	7.254	-0.002	16926	91.5
Aroclor-1016	2	7.653	-0.001	88099	117.7	2	7.857	0.001	45733	121.9
Aroclor-1016	3	7.794	0.003	35915	98.3	3	8.060	0.005	8078	47.7
Aroclor-1016	4	8.406	0.001	77842	329.5	4	8.307	0.000	37348	280.9
Total Col1Ave (4 peaks):					156.5	Total Col2Ave (4 peaks):				135.5 RPD = 14
Corrected Ave (3 peaks):					98.8	Corrected Ave (3 peaks):				87.0 RPD = 13
Aroclor-1221	1	---			0.0	1	---			0.0
Aroclor-1221	2	6.133	0.001	680	6.6	2	6.326	0.030	1966	34.7
Aroclor-1221	3	6.384	0.002	3390	14.1	3	6.631	0.009	1571	17.0
Col1Ave: <3 Quant Peaks						Col2Ave: <3 Quant Peaks				
Aroclor-1232	1	---			0.0	1	---			0.0
Aroclor-1232	2	6.133	0.002	680	9.9	2	7.254	-0.000	16926	210.6
Aroclor-1232	3	7.653	-0.002	88099	283.3	3	7.857	-0.004	45733	284.6
Aroclor-1232	4	8.581	-0.000	99572	753.4	4	8.714	-0.001	38224	826.6
Total Col1Ave (3 peaks):					348.9	Total Col2Ave (3 peaks):				440.6 RPD = 23
Corrected Ave: < 3 Peaks						Corrected Ave: < 3 Peaks				
Aroclor-1242	1	7.271	-0.000	19773	98.7	1	7.254	-0.002	16926	115.3
Aroclor-1242	2	7.653	-0.003	88099	144.8	2	7.857	-0.001	45733	148.2
Aroclor-1242	3	8.406	0.000	77842	411.2	3	9.165	-0.002	45021	468.7
Aroclor-1242	4	8.581	0.001	99572	355.8	4	9.590	-0.008	53613	458.1
Total Col1Ave (4 peaks):					252.6	Total Col2Ave (4 peaks):				297.6 RPD = 16
Corrected Ave (3 peaks):					199.8	Corrected Ave (3 peaks):				240.5 RPD = 19
Aroclor-1248	1	8.406	0.000	77842	246.8	1	8.307	-0.001	37348	247.5
Aroclor-1248	2	8.581	0.000	99572	248.3	2	8.714	-0.000	38224	245.0
Aroclor-1248	3	8.998	-0.000	186857	247.0	3	9.165	-0.000	45021	250.7
Aroclor-1248	4	9.294	-0.000	98398	255.5	4	9.590	-0.001	53613	248.7
Total Col1Ave (4 peaks):					249.4	Total Col2Ave (4 peaks):				248.0 RPD = 1
Corrected Ave (3 peaks):					247.4	Corrected Ave (3 peaks):				247.0 RPD = 0
Aroclor-1254	1	9.294	-0.004	98398	151.6	1	9.450	0.001	21823	90.8
Aroclor-1254	2	9.377	-0.001	49616	169.9	2	9.971	0.001	19450	100.6
Aroclor-1254	3	9.669	0.001	40230	96.4	3	10.124	0.000	36574	87.5
Aroclor-1254	4	9.808	0.001	68500	84.4	4	10.389	0.016	35100	86.1
Aroclor-1254	5	10.183	0.007	47365	93.1	5	10.573	0.004	5676	22.9
Total Col1Ave (5 peaks):					119.1	Total Col2Ave (5 peaks):				77.6 RPD = 42*
Corrected Ave (4 peaks):					106.4	Corrected Ave (4 peaks):				71.8 RPD = 39
Aroclor-1260	1	11.047	0.003	1670	3.0	1	11.662	0.009	2055	6.3
Aroclor-1260	2	11.362	0.001	1111	1.9	2	11.924	0.007	1466	1.8
Aroclor-1260	3	11.739	0.005	2107	1.4	3	12.434	-0.002	573	2.6
Aroclor-1260	4	12.144	0.005	1379	1.8	4	12.505	0.003	1003	1.8
Aroclor-1260	5	12.251	0.006	698	2.1	NS	---			----
Total Col1Ave (5 peaks):					2.1	Total Col2Ave (4 peaks):				3.1 RPD = 41*
Corrected Ave (4 peaks):					1.8	Corrected Ave (3 peaks):				2.0 RPD = 12
Aroclor-1262	1	10.833	0.005	15355	32.7	1	11.122	-0.079	7225	15.2
Aroclor-1262	2	12.251	0.007	698	0.9	2	11.662	0.011	2055	5.1
Aroclor-1262	3	12.321	0.002	836	1.0	3	12.434	0.000	573	1.2
Aroclor-1262	4	12.991	0.004	1043	1.4	4	12.505	0.003	1003	1.4
Total Col1Ave (4 peaks):					9.0	Total Col2Ave (4 peaks):				5.7 RPD = 45*
Corrected Ave (3 peaks):					1.1	Corrected Ave (3 peaks):				2.6 RPD = 80*
Aroclor-1268	1	12.251	0.004	698	0.4	1	12.434	0.002	573	0.5
Aroclor-1268	2	12.321	0.004	836	0.4	2	12.505	0.005	1003	0.8
Aroclor-1268	3	12.700	0.001	2449	1.5	3	12.892	0.001	721	0.7
Aroclor-1268	4	13.493	0.003	7547	1.4	4	13.708	-0.001	2265	0.7
Total Col1Ave (4 peaks):					0.9	Total Col2Ave (4 peaks):				0.7 RPD = 29
Corrected Ave (3 peaks):					0.7	Corrected Ave (3 peaks):				0.6 RPD = 13

Total PCB Area Col1 (5.906 - 13.793) = 1574335 Col1 Total PCB = 0.2 ppm*

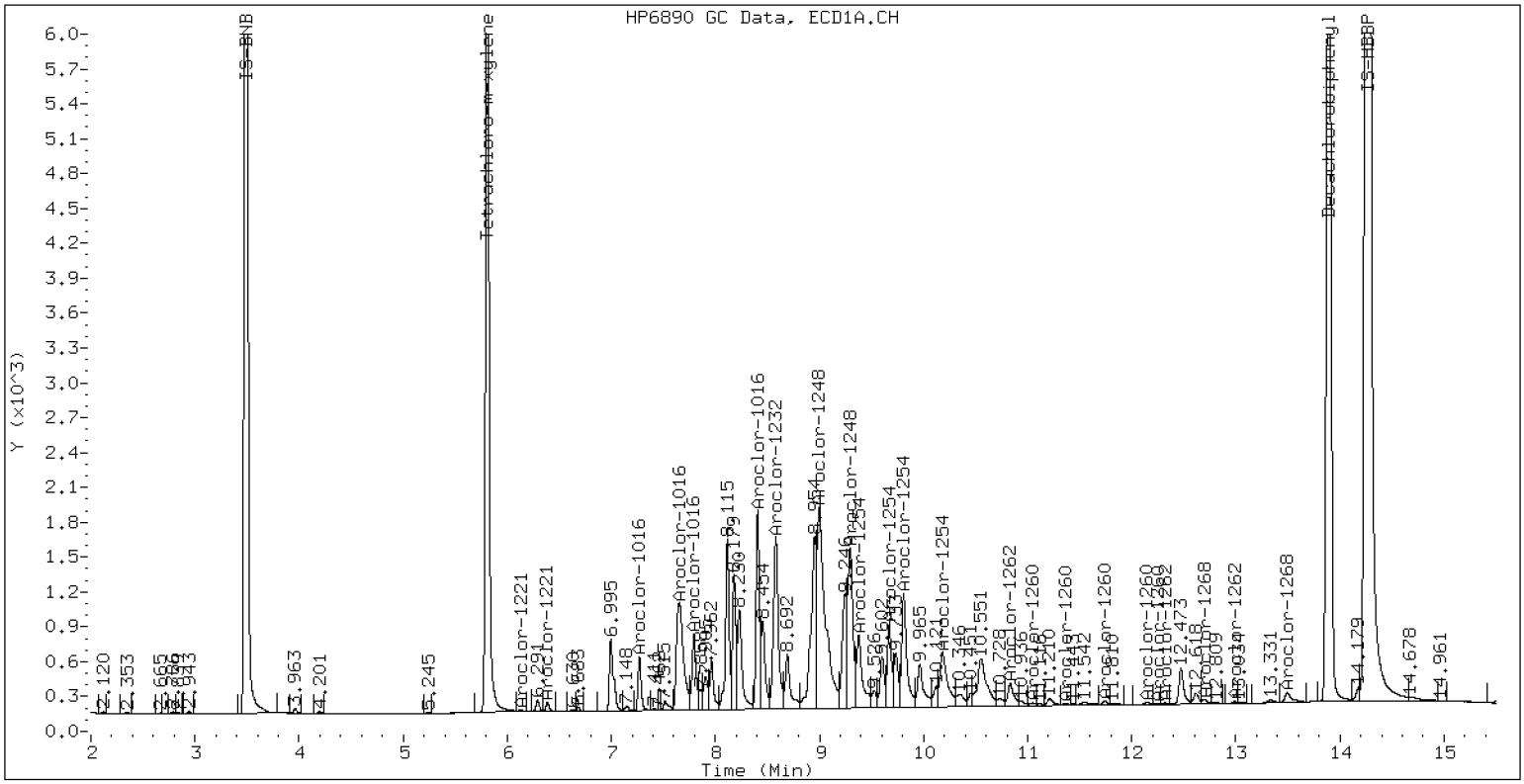
Total PCB Area Col2 (5.785 - 14.019) = 746330 Col2 Total PCB = 0.2 ppm*

* Quantitated against AR1660 0.25ppm in Ical

PCB-Form 10 Mod.

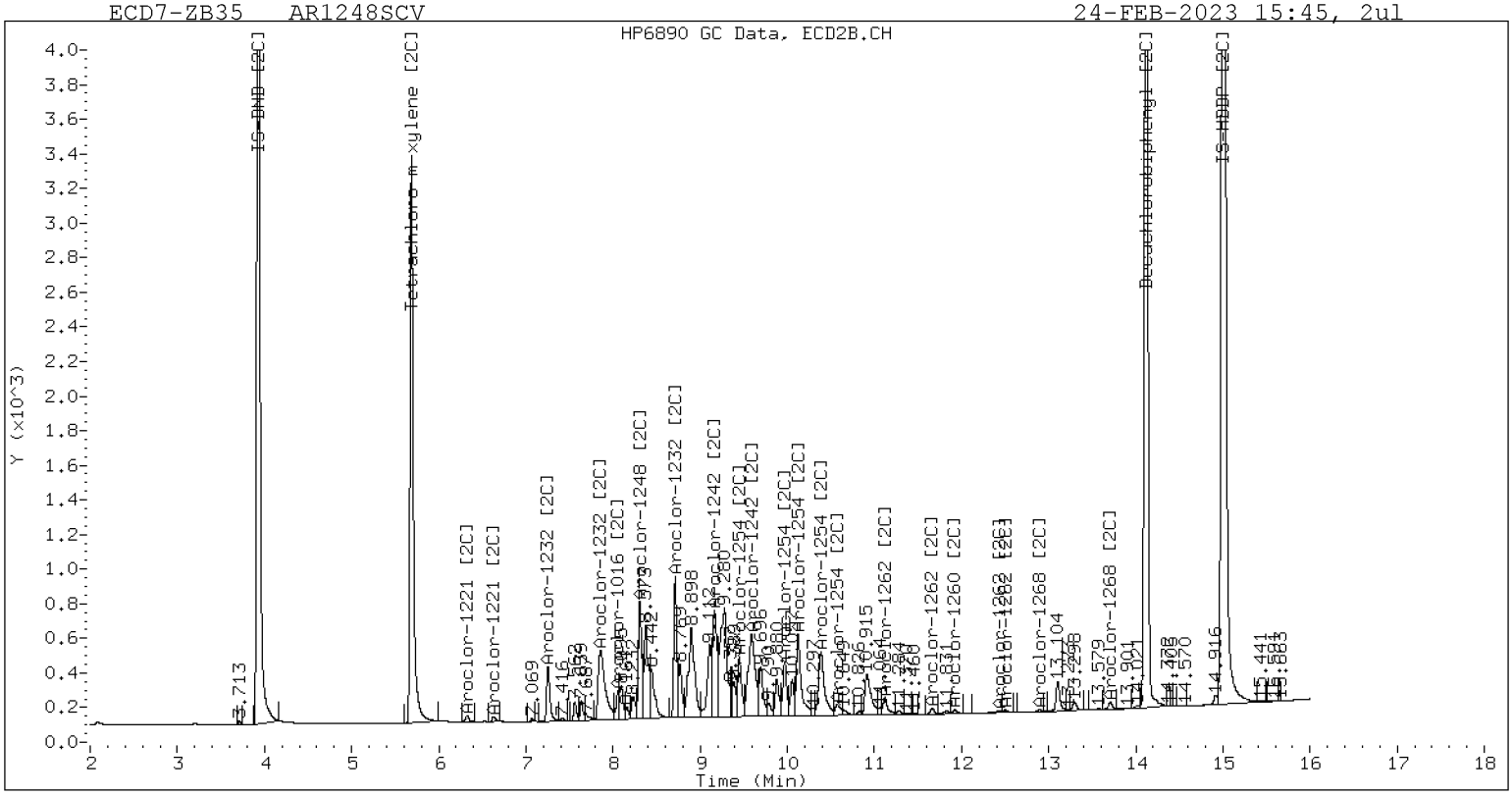
PCB Dual Column Chromatograms

ECD7-ZB5 AR1248SCV 24-FEB-2023 15:45, 2ul



ZB-5 Manual Integration: NO

ECD7-ZB35 AR1248SCV 24-FEB-2023 15:45, 2ul



ZB-35 Manual Integration: NO

Analytical Resources Inc.
Dual Column 608/8082 PCB Quantitation Report

Data file 1: /230224.b/02242316ECD7.D
Data file 2: /230224.b/230224.b/02242316ECD7.D
Method: \\target\share\chem4\ecd7.i\230224.b\PCB.m
Compound Sublist: PCB.sub
Instrument, Inj. Vol.: ecd7.i, 2ul
Quant Method: Internal Std

ARI ID: AR1254SCV
Client ID:
Injection Date: 24-FEB-2023 16:06
Report Date: 02/28/2023 09:51
Matrix: NONE
Dilution Factor: 1.0

SURROGATES

ZB5 Col RT	ZB5 Col Shift	ZB5 Col Response	ZB35 Col RT	ZB35 Col Shift	ZB35 Col Response	ZB5 on col	ZB35 on col	RPD	Compound/Flag
5.806	-0.000	354312	5.686	0.001	174604	36.1	37.1	2.6	Tetrachloro-m-xylene
13.895	0.002	540961	14.119	-0.000	329134	34.6	37.9	9.0	Decachlorobiphenyl

* Indicates RPD > 40%

INTERNAL STANDARD SUMMARY

Column 1

Standard Cpnd	Standard Area*	Sample Area	%D
Bromo-Nitrobenzene	673778	656887	-2.5
Hexabromobiphenyl	1429847	1585505	10.9

Column 2

Standard Cpnd	Standard Area*	Sample Area	%D
Bromo-Nitrobenzene	315256	320936	1.8
Hexabromobiphenyl	513946	570006	10.9

* Standard Areas taken from Initial Cal Level 3
Initial Calibration Date: 24-FEB-2023
<- Indicates standard response outside Limits (-50 to +100%)

	ZB5 Col					ZB35 Col				
Aroclor	Peak#	RT	Shift	Area	Amount	Peak#	RT	Shift	Area	Amount
Aroclor-1016	1	7.270	0.000	565	2.3	1	7.255	-0.001	387	2.1
Aroclor-1016	2	7.656	0.002	1875	2.5	2	7.854	-0.002	860	2.3
Aroclor-1016	3	7.792	0.002	1106	3.0	3	8.098	0.043	578	3.4
Aroclor-1016	4	8.405	0.000	29924	124.7	4	8.307	0.000	21985	162.9
Total Col1Ave (4 peaks):					33.1	Total Col2Ave (4 peaks):				42.6 RPD = 25
Corrected Ave (3 peaks):					2.6	Corrected Ave (3 peaks):				2.6 RPD = 0
Aroclor-1221	1	---			0.0	1	---			0.0
Aroclor-1221	2	---			0.0	2	6.325	0.028	1947	33.9
Aroclor-1221	3	---			0.0	3	6.637	0.015	368	3.9
Col1Ave: <3 Quant Peaks						Col2Ave: <3 Quant Peaks				
Aroclor-1232	1	---			0.0	1	---			0.0
Aroclor-1232	2	---			0.0	2	7.255	0.001	387	4.7
Aroclor-1232	3	7.656	0.000	1875	5.9	3	7.854	-0.007	860	5.3
Aroclor-1232	4	8.583	0.002	12327	91.8	4	8.715	0.000	15013	319.7
Col1Ave: <3 Quant Peaks						Col2Ave: 109.9				
Aroclor-1242	1	7.270	-0.000	565	2.8	1	7.255	-0.001	387	2.6
Aroclor-1242	2	7.656	0.000	1875	3.0	2	7.854	-0.004	860	2.7
Aroclor-1242	3	8.405	-0.000	29924	155.6	3	9.169	0.002	21933	224.9
Aroclor-1242	4	8.583	0.003	12327	43.4	4	9.545	-0.053	34065	286.6
Total Col1Ave (4 peaks):					51.2	Total Col2Ave (4 peaks):				129.2 RPD = 87*
Corrected Ave (3 peaks):					16.4	Corrected Ave (3 peaks):				76.7 RPD = 130*
Aroclor-1248	1	8.405	0.000	29924	93.4	1	8.307	-0.001	21985	143.5
Aroclor-1248	2	8.583	0.002	12327	30.3	2	8.715	0.001	15013	94.8
Aroclor-1248	3	8.992	-0.007	145580	189.4	3	9.169	0.004	21933	120.3
Aroclor-1248	4	9.298	0.003	155450	397.3	4	9.545	-0.046	34065	155.6
Total Col1Ave (4 peaks):					177.6	Total Col2Ave (4 peaks):				128.5 RPD = 32
Corrected Ave (3 peaks):					104.3	Corrected Ave (3 peaks):				119.5 RPD = 14
Aroclor-1254	1	9.298	-0.001	155450	235.7	1	9.450	0.001	58639	240.4
Aroclor-1254	2	9.377	-0.001	69801	235.3	2	9.971	0.000	47008	239.5
Aroclor-1254	3	9.668	-0.000	100839	237.8	3	10.124	0.000	100062	235.7
Aroclor-1254	4	9.807	0.000	190544	231.1	4	10.373	0.000	99535	240.5
Aroclor-1254	5	10.176	-0.000	122321	236.7	5	10.570	0.001	61549	244.2
Total Col1Ave (5 peaks):					235.3	Total Col2Ave (5 peaks):				240.1 RPD = 2
Corrected Ave (4 peaks):					234.7	Corrected Ave (4 peaks):				239.0 RPD = 2
Aroclor-1260	1	11.043	-0.002	12288	21.5	1	11.661	0.008	29062	86.7
Aroclor-1260	2	11.361	-0.001	13660	22.9	2	11.921	0.003	22238	26.0
Aroclor-1260	3	11.736	0.002	37632	23.8	3	12.441	0.005	3555	15.7
Aroclor-1260	4	12.141	0.002	27105	34.1	4	12.503	0.001	13126	22.8
Aroclor-1260	5	12.320	0.076	2381	6.9	NS	---			----
Total Col1Ave (5 peaks):					21.9	Total Col2Ave (4 peaks):				37.8 RPD = 53*
Corrected Ave (4 peaks):					18.8	Corrected Ave (3 peaks):				21.5 RPD = 13
Aroclor-1262	1	10.827	-0.002	220626	453.6	1	11.281	0.081	13562	27.9
Aroclor-1262	2	12.320	0.076	2381	3.0	2	11.661	0.009	29062	70.1
Aroclor-1262	3	---			0.0	3	12.441	0.007	3555	7.6
Aroclor-1262	4	12.989	0.002	3225	4.1	4	12.503	0.001	13126	17.8
Total Col1Ave (3 peaks):					153.6	Total Col2Ave (4 peaks):				30.8 RPD = 133*
Corrected Ave: < 3 Peaks						Corrected Ave (3 peaks):				17.7
Aroclor-1268	1	12.320	0.074	2381	1.2	1	12.441	0.009	3555	3.1
Aroclor-1268	2	---			0.0	2	12.503	0.003	13126	10.6
Aroclor-1268	3	12.701	0.002	2939	1.7	3	12.892	0.000	772	0.7
Aroclor-1268	4	13.493	0.003	9164	1.6	4	13.707	-0.002	2801	0.8
Total Col1Ave (3 peaks):					1.5	Total Col2Ave (4 peaks):				3.8 RPD = 87*
Corrected Ave: < 3 Peaks						Corrected Ave (3 peaks):				1.6

Total PCB Area Col1 (5.906 - 13.793) = 2118645 Col1 Total PCB = 0.3 ppm*

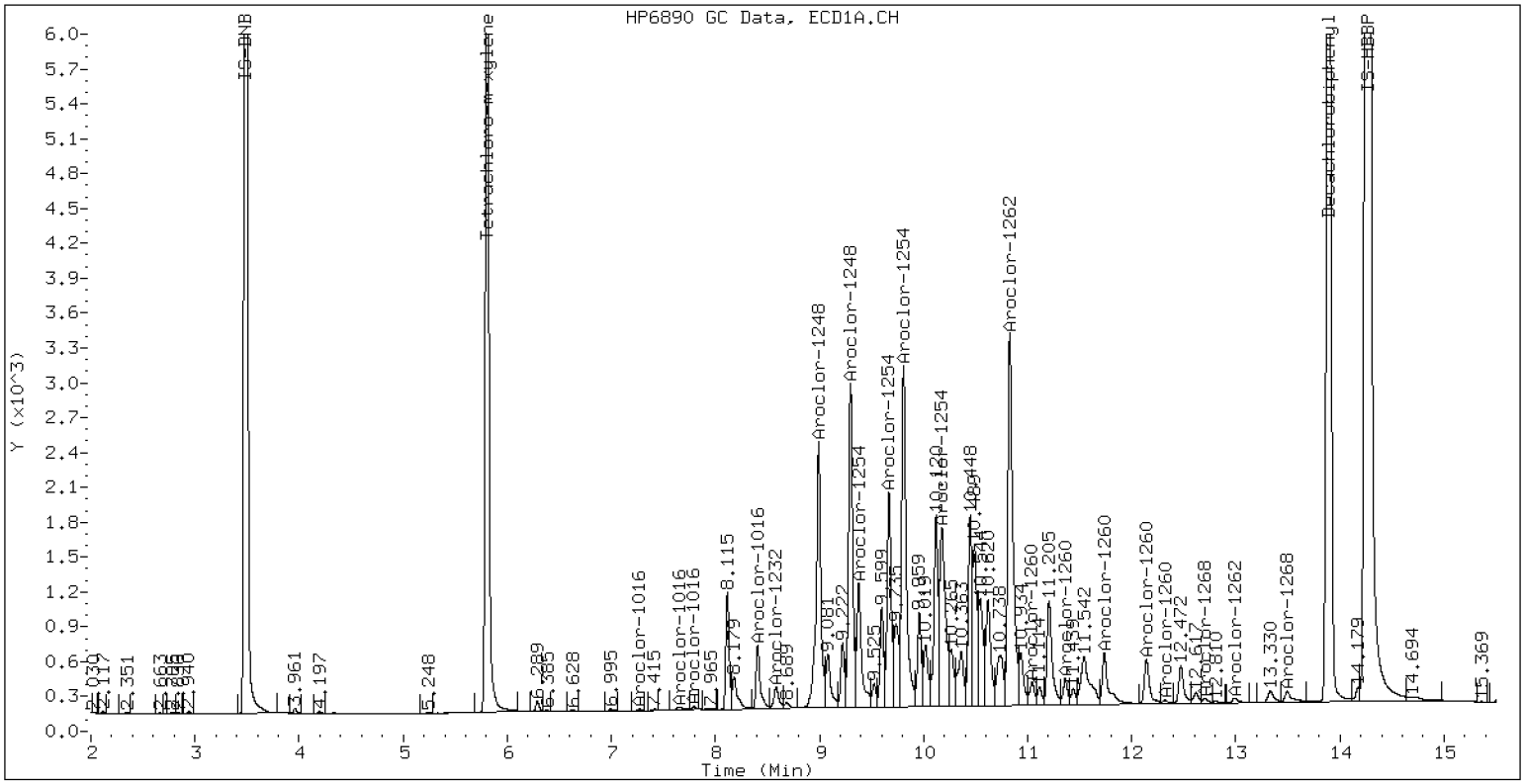
Total PCB Area Col2 (5.785 - 14.019) = 1007601 Col2 Total PCB = 0.3 ppm*

* Quantitated against AR1660 0.25ppm in Ical

PCB-Form 10 Mod.

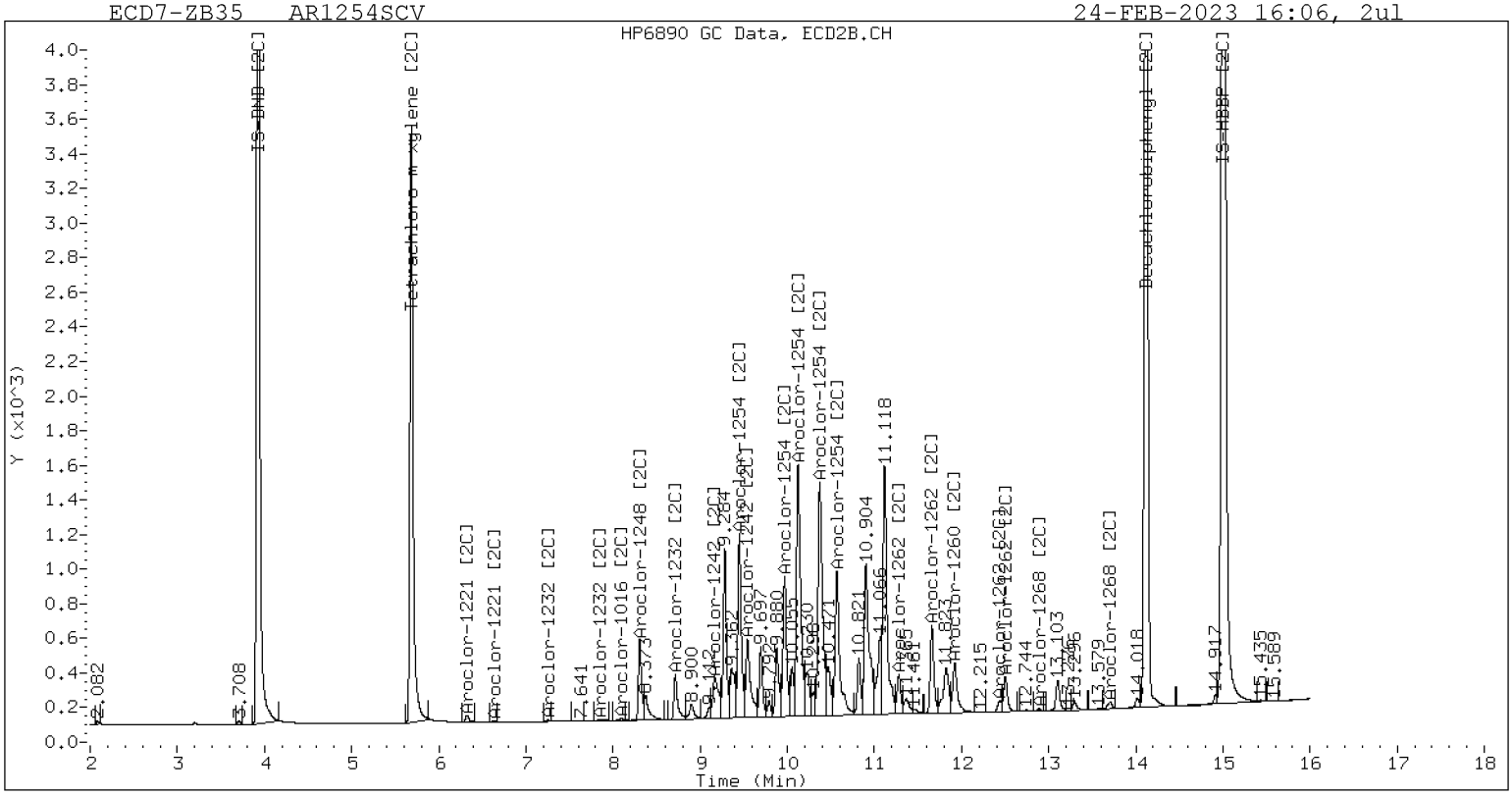
PCB Dual Column Chromatograms

ECD7-ZB5 AR1254SCV 24-FEB-2023 16:06, 2ul



ZB-5 Manual Integration: NO

ECD7-ZB35 AR1254SCV 24-FEB-2023 16:06, 2ul



ZB-35 Manual Integration: NO

Analytical Resources Inc.
Dual Column 608/8082 PCB Quantitation Report

Data file 1: /230224.b/02242317ECD7.D
Data file 2: /230224.b/230224.b/02242317ECD7.D
Method: \\target\share\chem4\ecd7.i\230224.b\PCB.m
Compound Sublist: PCB.sub
Instrument, Inj. Vol.: ecd7.i, 2ul
Quant Method: Internal Std

ARI ID: AR2162SCV
Client ID:
Injection Date: 24-FEB-2023 16:27
Report Date: 02/28/2023 09:51
Matrix: NONE
Dilution Factor: 1.0

SURROGATES

ZB5 Col RT	ZB5 Col Shift	ZB5 Col Response	ZB35 Col RT	ZB35 Col Shift	ZB35 Col Response	ZB5 on col	ZB35 on col	RPD	Compound/Flag
5.807	0.000	356001	5.685	0.000	170882	36.0	36.6	1.7	Tetrachloro-m-xylene
13.895	0.002	533971	14.119	0.000	326235	34.4	37.9	9.5	Decachlorobiphenyl

* Indicates RPD > 40%

INTERNAL STANDARD SUMMARY

Column 1

Standard Cpnd	Standard Area*	Sample Area	%D
Bromo-Nitrobenzene	673778	661953	-1.8
Hexabromobiphenyl	1429847	1574993	10.2

Column 2

Standard Cpnd	Standard Area*	Sample Area	%D
Bromo-Nitrobenzene	315256	317807	0.8
Hexabromobiphenyl	513946	565951	10.1

* Standard Areas taken from Initial Cal Level 3
Initial Calibration Date: 24-FEB-2023
<- Indicates standard response outside Limits (-50 to +100%)

	ZB5 Col					ZB35 Col				
Aroclor	Peak#	RT	Shift	Area	Amount	Peak#	RT	Shift	Area	Amount
Aroclor-1016	1	7.269	-0.001	7175	28.5	1	7.256	0.000	3727	20.0
Aroclor-1016	2	7.659	0.005	12893	16.8	2	7.863	0.007	5834	15.5
Aroclor-1016	3	7.794	0.004	6936	18.5	3	8.063	0.009	2963	17.4
Aroclor-1016	4	8.408	0.003	3610	14.9	4	8.308	0.002	2045	15.3
Total Col1Ave (4 peaks):					19.7	Total Col2Ave (4 peaks):				17.0 RPD = 14
Corrected Ave (3 peaks):					16.8	Corrected Ave (3 peaks):				16.1 RPD = 4
Aroclor-1221	1	4.730	-0.000	15803	266.6	1	4.955	-0.001	7909	262.9
Aroclor-1221	2	6.131	-0.001	26946	254.1	2	6.296	-0.000	14303	251.2
Aroclor-1221	3	6.382	-0.000	62477	253.8	3	6.622	0.000	23612	254.7
Total Col1Ave (3 peaks):					258.2	Total Col2Ave (3 peaks):				256.3 RPD = 1
Corrected Ave: < 3 Peaks						Corrected Ave: < 3 Peaks				
Aroclor-1232	1	4.730	0.000	15803	445.6	1	4.955	-0.001	7909	486.4
Aroclor-1232	2	6.131	0.000	26946	383.1	2	7.256	0.002	3727	46.1
Aroclor-1232	3	7.659	0.003	12893	40.5	3	7.863	0.002	5834	36.1
Aroclor-1232	4	8.583	0.003	2684	19.8	4	8.716	0.002	1189	25.6
Total Col1Ave (4 peaks):					222.3	Total Col2Ave (4 peaks):				148.5 RPD = 40
Corrected Ave (3 peaks):					147.8	Corrected Ave (3 peaks):				35.9 RPD = 122*
Aroclor-1242	1	7.269	-0.001	7175	35.0	1	7.256	0.000	3727	25.2
Aroclor-1242	2	7.659	0.003	12893	20.7	2	7.863	0.005	5834	18.8
Aroclor-1242	3	8.408	0.002	3610	18.6	3	9.175	0.008	1082	11.2
Aroclor-1242	4	8.583	0.004	2684	9.4	4	9.543	-0.054	1390	11.8
Total Col1Ave (4 peaks):					20.9	Total Col2Ave (4 peaks):				16.8 RPD = 22
Corrected Ave (3 peaks):					16.2	Corrected Ave (3 peaks):				13.9 RPD = 15
Aroclor-1248	1	8.408	0.002	3610	11.2	1	8.308	0.001	2045	13.5
Aroclor-1248	2	8.583	0.003	2684	6.5	2	8.716	0.002	1189	7.6
Aroclor-1248	3	8.994	-0.005	24440	31.6	3	9.175	0.009	1082	6.0
Aroclor-1248	4	9.302	0.008	26328	66.8	4	9.543	-0.048	1390	6.4
Total Col1Ave (4 peaks):					29.0	Total Col2Ave (4 peaks):				8.4 RPD = 110*
Corrected Ave (3 peaks):					16.4	Corrected Ave (3 peaks):				6.7 RPD = 85*
Aroclor-1254	1	9.302	0.004	26328	39.6	1	9.452	0.003	9571	39.6
Aroclor-1254	2	---			0.0	2	9.972	0.002	1733	8.9
Aroclor-1254	3	9.670	0.002	3721	8.7	3	10.147	0.023	49218	117.1
Aroclor-1254	4	9.808	0.000	9653	11.6	4	10.370	-0.002	59603	145.4
Aroclor-1254	5	10.120	-0.056	131179	251.9	5	10.569	0.001	79533	318.7
Total Col1Ave (4 peaks):					78.0	Total Col2Ave (5 peaks):				125.9 RPD = 47*
Corrected Ave (3 peaks):					20.0	Corrected Ave (4 peaks):				77.8 RPD = 118*
Aroclor-1260	1	11.044	-0.000	223208	394.0	1	11.652	-0.001	104071	312.7
Aroclor-1260	2	11.361	-0.001	190166	321.2	2	11.919	0.002	251579	296.2
Aroclor-1260	3	11.737	0.003	458281	291.9	3	12.435	-0.001	113645	504.2
Aroclor-1260	4	12.141	0.002	149720	189.4	4	12.501	-0.001	182951	319.6
Aroclor-1260	5	12.244	0.000	196033	576.0	NS	---			----
Total Col1Ave (5 peaks):					354.5	Total Col2Ave (4 peaks):				358.2 RPD = 1
Corrected Ave (4 peaks):					299.1	Corrected Ave (3 peaks):				309.5 RPD = 3
Aroclor-1262	1	10.828	-0.001	121431	251.3	1	11.201	0.000	121335	251.1
Aroclor-1262	2	12.244	0.000	196033	249.3	2	11.652	0.000	104071	252.9
Aroclor-1262	3	12.319	0.001	211092	249.8	3	12.435	0.001	113645	243.4
Aroclor-1262	4	12.988	0.001	183455	237.5	4	12.501	-0.001	182951	250.1
Total Col1Ave (4 peaks):					247.0	Total Col2Ave (4 peaks):				249.3 RPD = 1
Corrected Ave (3 peaks):					245.5	Corrected Ave (3 peaks):				248.2 RPD = 1
Aroclor-1268	1	12.244	-0.002	196033	97.1	1	12.435	0.003	113645	99.7
Aroclor-1268	2	12.319	0.002	211092	105.6	2	12.501	0.001	182951	149.3
Aroclor-1268	3	12.723	0.024	77240	45.2	3	12.891	-0.000	7755	7.4
Aroclor-1268	4	13.488	-0.002	65479	11.6	4	13.709	0.000	35146	10.5
Total Col1Ave (4 peaks):					64.9	Total Col2Ave (4 peaks):				66.7 RPD = 3

Corrected Ave (3 peaks): 51.3 Corrected Ave (3 peaks): 39.2 RPD = 27

Total PCB Area Col1 (5.906 - 13.793) = 3239932 Col1 Total PCB = 0.4 ppm*

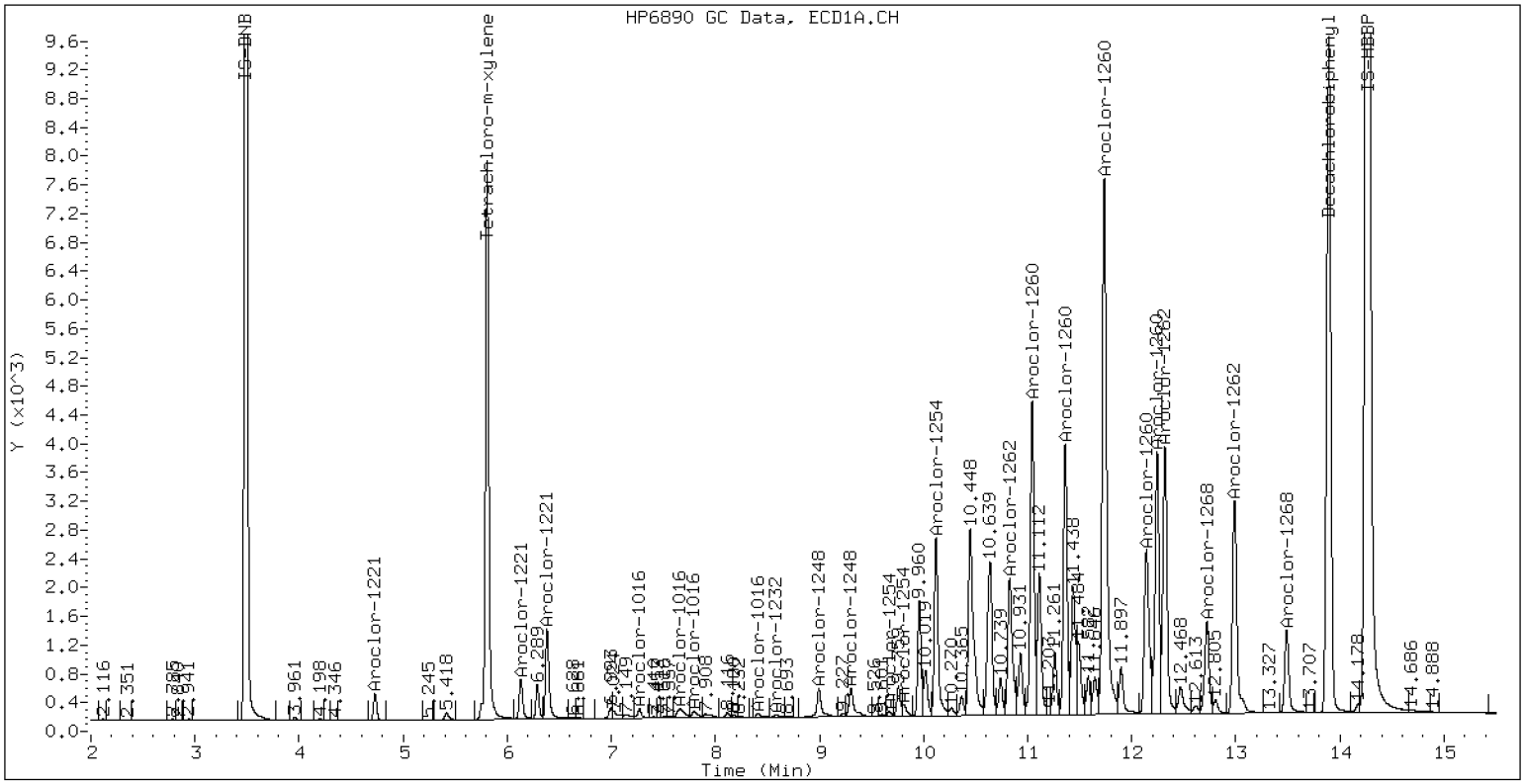
Total PCB Area Col2 (5.785 - 14.019) = 1655522 Col2 Total PCB = 0.4 ppm*

* Quantitated against AR1660 0.25ppm in Ical

PCB-Form 10 Mod.

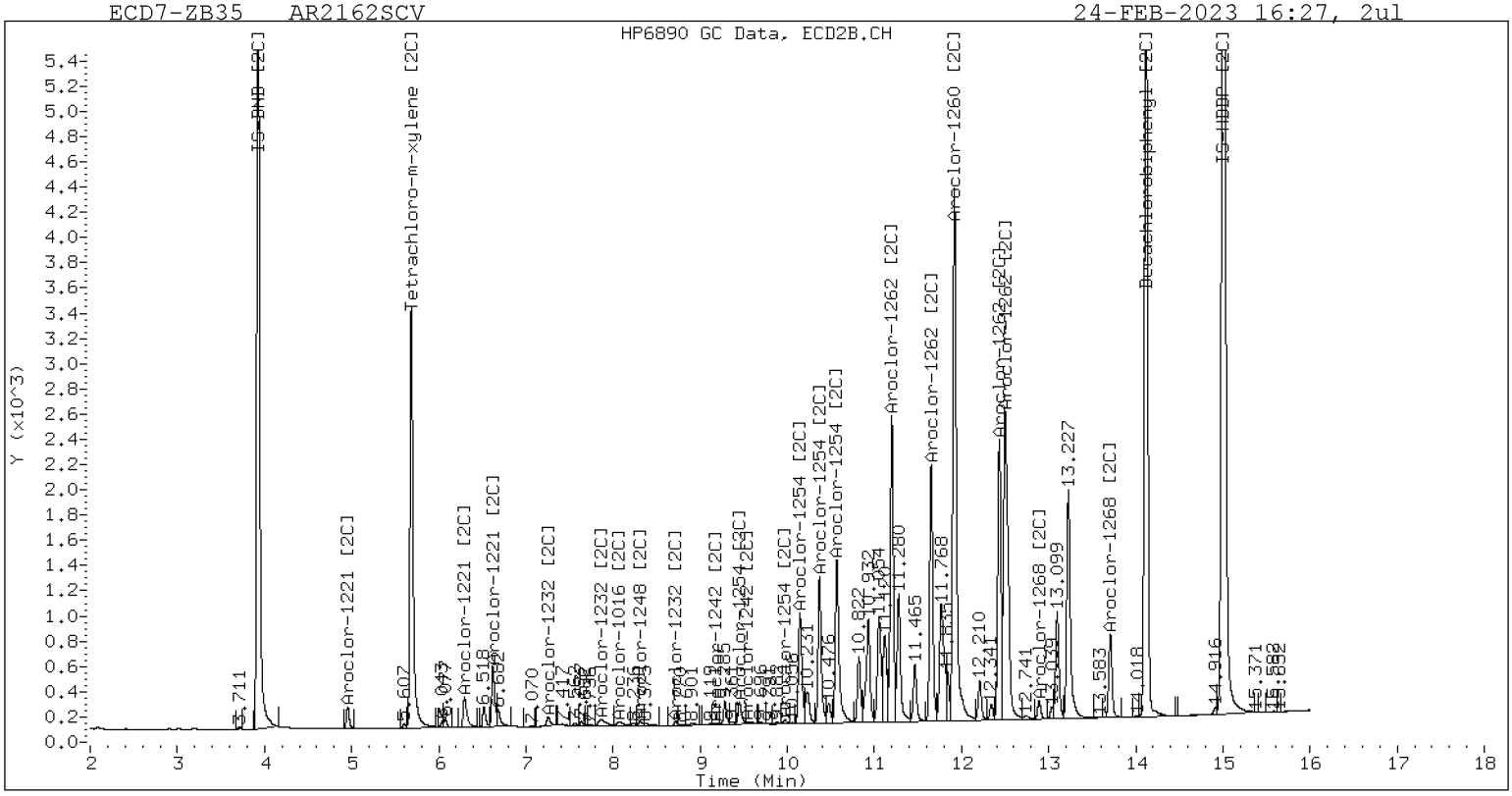
PCB Dual Column Chromatograms

ECD7-ZB5 AR2162SCV 24-FEB-2023 16:27, 2ul



ZB-5 Manual Integration: NO

ECD7-ZB35 AR2162SCV 24-FEB-2023 16:27, 2ul



ZB-35 Manual Integration: NO

Analytical Resources Inc.
Dual Column 608/8082 PCB Quantitation Report

Data file 1: /230224.b/02242318ECD7.D
Data file 2: /230224.b/230224.b/02242318ECD7.D
Method: \\target\share\chem4\ecd7.i\230224.b\PCB.m
Compound Sublist: PCB.sub
Instrument, Inj. Vol.: ecd7.i, 2ul
Quant Method: Internal Std

ARI ID: AR3268SCV
Client ID:
Injection Date: 24-FEB-2023 16:48
Report Date: 02/28/2023 09:51
Matrix: NONE
Dilution Factor: 1.0

SURROGATES

ZB5 Col RT	ZB5 Col Shift	ZB5 Col Response	ZB35 Col RT	ZB35 Col Shift	ZB35 Col Response	ZB5 on col	ZB35 on col	RPD	Compound/Flag
5.806	0.000	363331	5.685	0.000	176204	37.1	38.2	2.9	Tetrachloro-m-xylene
13.894	0.001	800845	14.118	-0.001	488290	51.3	56.4	9.5	Decachlorobiphenyl

* Indicates RPD > 40%

INTERNAL STANDARD SUMMARY

Column 1

Standard Cpnd	Standard Area*	Sample Area	%D
Bromo-Nitrobenzene	673778	656592	-2.6
Hexabromobiphenyl	1429847	1584453	10.8

Column 2

Standard Cpnd	Standard Area*	Sample Area	%D
Bromo-Nitrobenzene	315256	314741	-0.2
Hexabromobiphenyl	513946	568346	10.6

* Standard Areas taken from Initial Cal Level 3
Initial Calibration Date: 24-FEB-2023
<- Indicates standard response outside Limits (-50 to +100%)

	ZB5 Col					ZB35 Col				
Aroclor	Peak#	RT	Shift	Area	Amount	Peak#	RT	Shift	Area	Amount
Aroclor-1016	1	7.270	-0.001	28327	113.6	1	7.254	-0.001	20651	112.1
Aroclor-1016	2	7.657	0.003	80668	106.1	2	7.861	0.005	41326	110.6
Aroclor-1016	3	7.793	0.003	40661	109.6	3	8.060	0.005	20446	121.2
Aroclor-1016	4	8.407	0.002	24680	102.9	4	8.308	0.001	13576	102.5
Total Col1Ave (4 peaks):				108.0		Total Col2Ave (4 peaks):			111.6	RPD = 3
Corrected Ave (3 peaks):				106.2		Corrected Ave (3 peaks):			108.4	RPD = 2
Aroclor-1221	1	4.729	-0.001	8535	145.1	1	4.956	-0.000	3965	133.1
Aroclor-1221	2	6.132	-0.000	15523	147.6	2	6.297	0.001	8689	154.1
Aroclor-1221	3	6.382	-0.000	45872	187.9	3	6.622	0.001	22272	242.6
Total Col1Ave (3 peaks):				160.2		Total Col2Ave (3 peaks):			176.6	RPD = 10
Corrected Ave: < 3 Peaks						Corrected Ave: < 3 Peaks				
Aroclor-1232	1	4.729	-0.001	8535	242.6	1	4.956	0.000	3965	246.2
Aroclor-1232	2	6.132	0.001	15523	222.5	2	7.254	0.000	20651	258.1
Aroclor-1232	3	7.657	0.001	80668	255.4	3	7.861	0.001	41326	258.3
Aroclor-1232	4	8.582	0.001	34784	259.2	4	8.714	-0.001	12504	271.5
Total Col1Ave (4 peaks):				244.9		Total Col2Ave (4 peaks):			258.5	RPD = 5
Corrected Ave (3 peaks):				240.2		Corrected Ave (3 peaks):			254.2	RPD = 6
Aroclor-1242	1	7.270	-0.001	28327	139.2	1	7.254	-0.001	20651	141.2
Aroclor-1242	2	7.657	0.001	80668	130.5	2	7.861	0.003	41326	134.4
Aroclor-1242	3	8.407	0.001	24680	128.4	3	9.170	0.003	12830	134.1
Aroclor-1242	4	8.582	0.003	34784	122.4	4	9.600	0.003	14836	127.3
Total Col1Ave (4 peaks):				130.1		Total Col2Ave (4 peaks):			134.3	RPD = 3
Corrected Ave (3 peaks):				127.1		Corrected Ave (3 peaks):			132.0	RPD = 4
Aroclor-1248	1	8.407	0.001	24680	77.0	1	8.308	0.000	13576	90.3
Aroclor-1248	2	8.582	0.001	34784	85.4	2	8.714	-0.000	12504	80.5
Aroclor-1248	3	8.996	-0.003	83592	108.8	3	9.170	0.004	12830	71.8
Aroclor-1248	4	9.292	-0.003	39603	101.3	4	9.600	0.010	14836	69.1
Total Col1Ave (4 peaks):				93.1		Total Col2Ave (4 peaks):			77.9	RPD = 18
Corrected Ave (3 peaks):				87.9		Corrected Ave (3 peaks):			73.8	RPD = 17
Aroclor-1254	1	9.292	-0.007	39603	60.1	1	9.452	0.003	4590	19.2
Aroclor-1254	2	9.377	-0.000	11450	38.6	2	9.973	0.003	2892	15.0
Aroclor-1254	3	9.674	0.005	6387	15.1	3	10.131	0.007	6052	14.5
Aroclor-1254	4	9.813	0.006	10162	12.3	4	10.390	0.017	5324	13.1
Aroclor-1254	5	10.189	0.012	6862	13.3	5	10.572	0.004	1891	7.7
Total Col1Ave (5 peaks):				27.9		Total Col2Ave (5 peaks):			13.9	RPD = 67*
Corrected Ave (4 peaks):				19.8		Corrected Ave (4 peaks):			12.6	RPD = 45*
Aroclor-1260	1	11.046	0.002	87033	152.7	1	11.645	-0.008	62543	187.1
Aroclor-1260	2	11.362	0.001	6300	10.6	2	11.920	0.003	28552	33.5
Aroclor-1260	3	11.738	0.004	54524	34.5	3	12.432	-0.004	285450	1261.2
Aroclor-1260	4	12.144	0.005	1727	2.2	4	12.499	-0.002	306992	534.0
Aroclor-1260	5	12.246	0.002	502931	1469.0	NS	---			----
Total Col1Ave (5 peaks):				333.8		Total Col2Ave (4 peaks):			503.9	RPD = 41*
Corrected Ave (4 peaks):				50.0		Corrected Ave (3 peaks):			251.5	RPD = 134*
Aroclor-1262	1	10.832	0.004	3395	7.0	1	11.201	0.001	44255	91.2
Aroclor-1262	2	12.246	0.002	502931	635.9	2	11.645	-0.007	62543	151.3
Aroclor-1262	3	12.318	-0.000	497006	584.5	3	12.432	-0.002	285450	608.7
Aroclor-1262	4	12.987	-0.000	202197	260.2	4	12.499	-0.003	306992	417.9
Total Col1Ave (4 peaks):				371.9		Total Col2Ave (4 peaks):			317.3	RPD = 16
Corrected Ave (3 peaks):				283.9		Corrected Ave (3 peaks):			220.1	RPD = 25
Aroclor-1268	1	12.246	-0.001	502931	247.7	1	12.432	-0.000	285450	249.4
Aroclor-1268	2	12.318	0.002	497006	247.2	2	12.499	-0.001	306992	249.5
Aroclor-1268	3	12.699	-0.000	422793	245.8	3	12.892	0.000	260893	248.4
Aroclor-1268	4	13.490	0.000	1386953	244.9	4	13.709	-0.000	829733	247.1
Total Col1Ave (4 peaks):				246.4		Total Col2Ave (4 peaks):			248.6	RPD = 1

Corrected Ave (3 peaks): 246.0 Corrected Ave (3 peaks): 248.3 RPD = 1

Total PCB Area Col1 (5.906 - 13.793) = 4180607 Col1 Total PCB = 0.5 ppm*

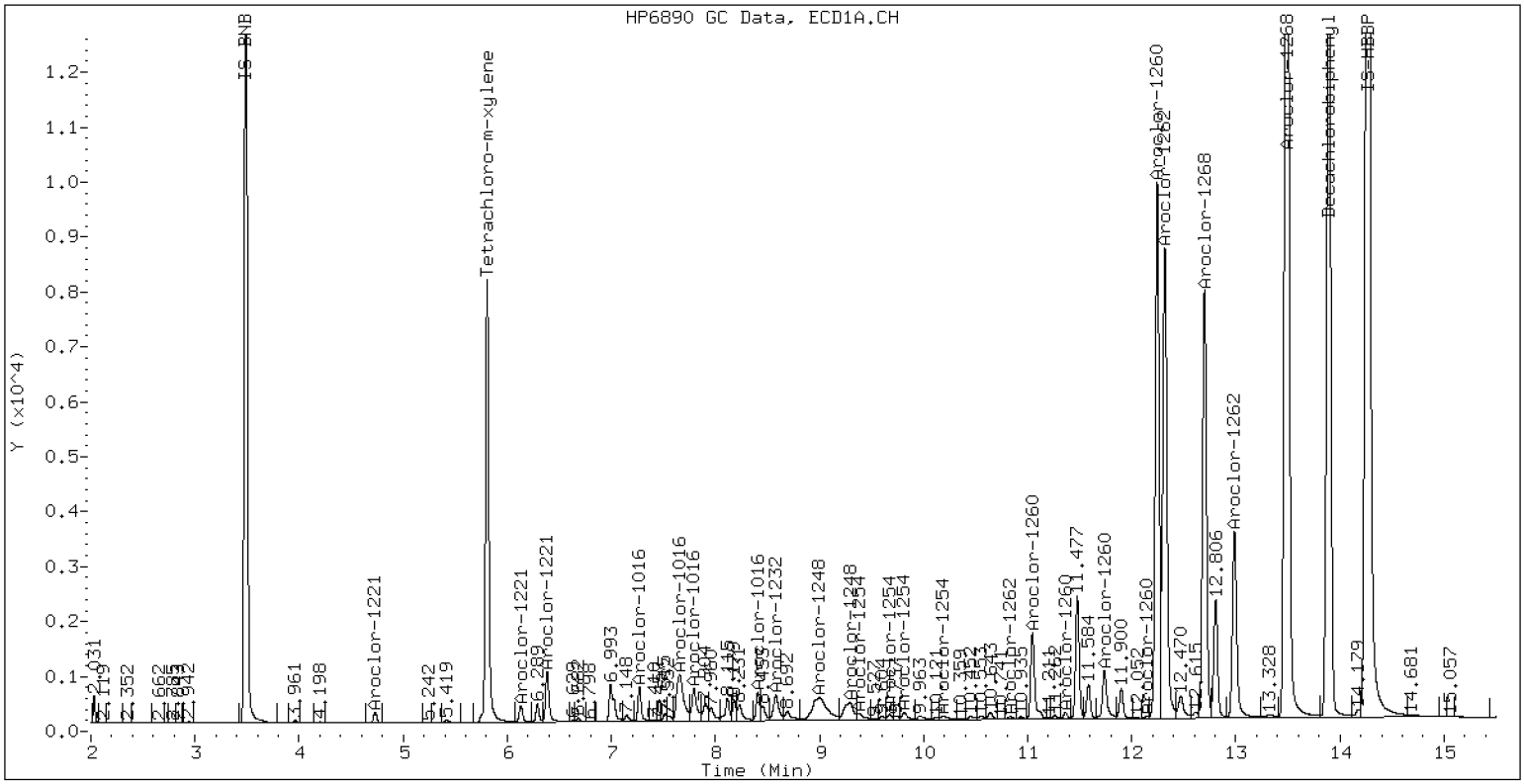
Total PCB Area Col2 (5.785 - 14.019) = 2376912 Col2 Total PCB = 0.6 ppm*

* Quantitated against AR1660 0.25ppm in Ical

PCB-Form 10 Mod.

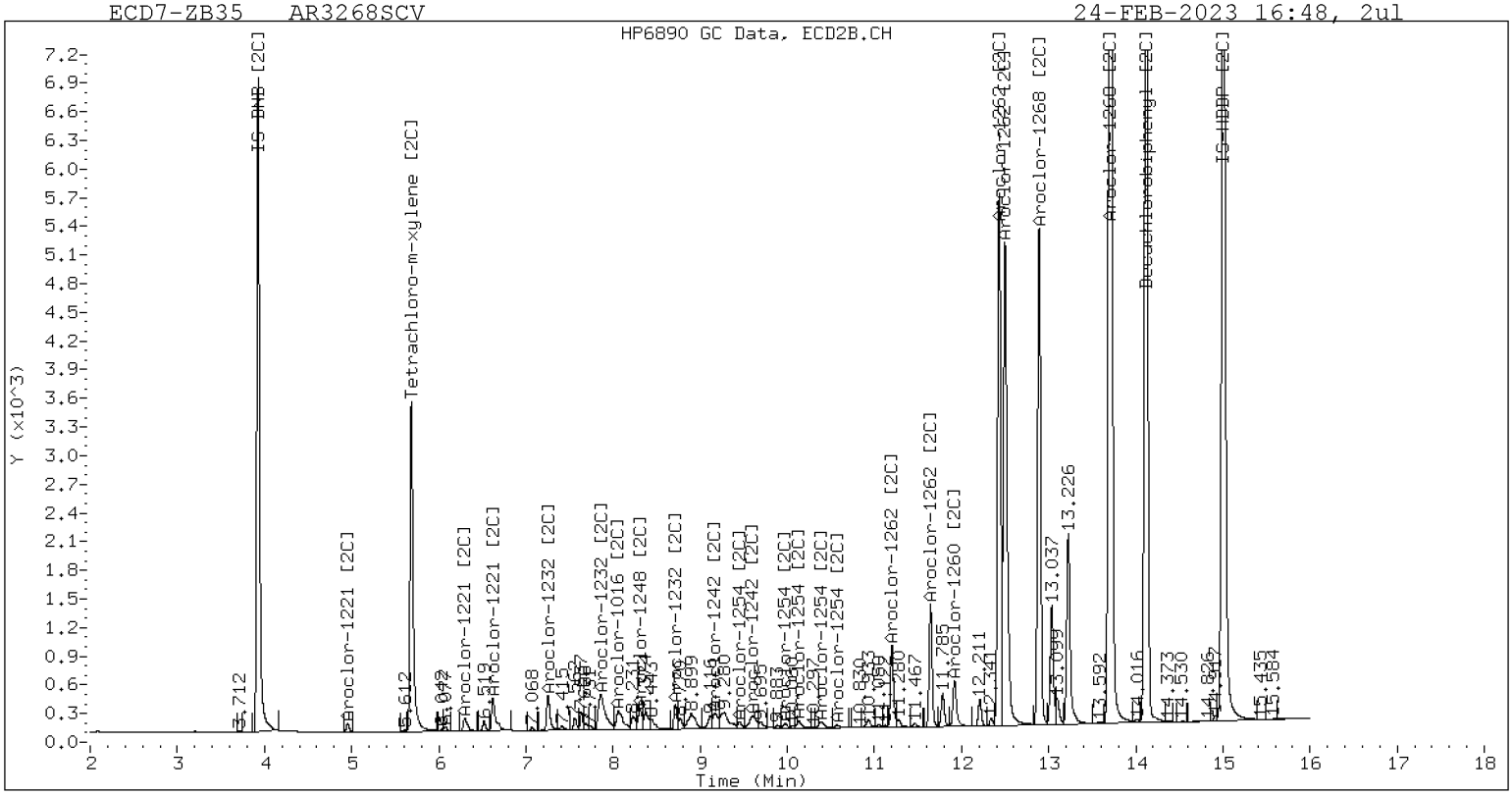
PCB Dual Column Chromatograms

ECD7-ZB5 AR3268SCV 24-FEB-2023 16:48, 2ul



ZB-5 Manual Integration: NO

ECD7-ZB35 AR3268SCV 24-FEB-2023 16:48, 2ul



ZB-35 Manual Integration: NO

Analytical Resources Inc.
8082 DDT SCREEN REPORT

Data file 1: /230224.b/02242319ECD7.D ARI ID: DDTS

ZB5 Col RT	ZB5 Col Shift	ZB5 Col Response	ZB35 Col RT	ZB35 Col Shift	ZB35 Col Response	ZB5 on col	ZB35 on col	RPD	Compound/Flag
9.261	0.000	694353	9.912	0.000	580269	0.100	0.100	0.0	2,4-DDE
0.000	-10.293	0	10.672	0.000	673479	0.000	0.200#	----	2,4-DDT
9.686	0.000	1191406	10.212	0.000	433373	0.100	0.100	0.0	4,4-DDE
10.259	0.000	1721760	10.672	0.000	673479	0.100	0.200#	66.7*	4,4-DDD

# Indicates value is from co-eluting peaks
* Indicates RPD > 40%

Analytical Resources Inc.
8082 DDT SCREEN REPORT

Data file 1: /230224.b/02242320ECD7.D ARI ID: DDT BD

ZB5 Col RT	ZB5 Col Shift	ZB5 Col Response	ZB35 Col RT	ZB35 Col Shift	ZB35 Col Response	ZB5 on col	ZB35 on col	RPD	Compound/Flag
9.285	0.023	4923	9.921	0.009	9972	0.001	0.002	84.3*	2,4-DDE
0.000	-10.293	0	10.677	0.004	249094	0.000	0.074#	----	2,4-DDT
9.692	0.006	12128	10.221	0.009	528	0.001	0.000	156.7*	4,4-DDE
10.265	0.006	410017	10.677	0.004	249094	0.023	0.074#	103.6*	4,4-DDD

# Indicates value is from co-eluting peaks
* Indicates RPD > 40%

Analytical Resources, LLC
Analytical Chemists and Consultants

ANALYSIS SEQUENCE

SLB0342

Instrument: ECD7
Calibration ID: GB00069

Printed: 2/28/2023 9:54:44AM

Lab Number	Analysis	Container	Order	Position	STD ID	ISTD ID	Client	Comments
SLB0342-CAL1	QC		1		L000856	L000844		
SLB0342-CAL2	QC		2		L000859	L000844		
SLB0342-CAL3	QC		3		L000858	L000844		
SLB0342-CAL4	QC		4		L000731	L000844		
SLB0342-CAL5	QC		5		L000857	L000844		
SLB0342-CAL6	QC		6		L000855	L000844		
SLB0342-CAL7	QC		7		L000860	L000844		
SLB0342-CAL8	QC		8		L000861	L000844		
SLB0342-CAL9	QC		9		L000862	L000844		
SLB0342-CALA	QC		10		L000863	L000844		
SLB0342-CALB	QC		11		L000864	L000844		
SLB0342-SCV1	QC		12		L002065	L000844		
SLB0342-SCV2	QC		13		K007656	L000844		
SLB0342-SCV3	QC		14		L002066	L000844		
SLB0342-SCV4	QC		15		L002067	L000844		
SLB0342-SCV5	QC		16		L002068	L000844		
SLB0342-SCV6	QC		17		L002069	L000844		

Samples Loaded By Date

Data Processed By Date

GC LOG SUMMARY FOR DATABATCH - \\target\share\chem4\ecd7.i\230224.b

	Inject Date/Time	Filename	DF	LabID	ClientID
1	24-FEB-2023 10:51	02242301ECD7.D	1	IB	
2	24-FEB-2023 11:12	02242302ECD7.D	1	0.25PPMAR1660	
3	24-FEB-2023 11:33	02242303ECD7.D	1	0.02PPMAR1660	
4	24-FEB-2023 11:54	02242304ECD7.D	1	0.05PPMAR1660	
5	24-FEB-2023 12:15	02242305ECD7.D	1	1.0PPMAR1660	
6	24-FEB-2023 12:36	02242306ECD7.D	1	0.1PPMAR1660	
7	24-FEB-2023 12:57	02242307ECD7.D	1	0.5PPMAR1660	
8	24-FEB-2023 13:18	02242308ECD7.D	1	0.25PPMAR1242	
9	24-FEB-2023 13:39	02242309ECD7.D	1	0.25PPMAR1248	
10	24-FEB-2023 14:00	02242310ECD7.D	1	0.25PPMAR1254	
11	24-FEB-2023 14:21	02242311ECD7.D	1	0.25PPMAR2162	
12	24-FEB-2023 14:42	02242312ECD7.D	1	0.25PPMAR3268	
13	24-FEB-2023 15:03	02242313ECD7.D	1	AR1660SCV	
14	24-FEB-2023 15:24	02242314ECD7.D	1	AR1242SCV	
15	24-FEB-2023 15:45	02242315ECD7.D	1	AR1248SCV	
16	24-FEB-2023 16:06	02242316ECD7.D	1	AR1254SCV	
17	24-FEB-2023 16:27	02242317ECD7.D	1	AR2162SCV	
18	24-FEB-2023 16:48	02242318ECD7.D	1	AR3268SCV	
19	24-FEB-2023 17:09	02242319ECD7.D	1	DDTS	
20	24-FEB-2023 17:30	02242320ECD7.D	1	DDT BD	

MANUAL INTEGRATION SUMMARY FOR DATABATCH - \\target\share\chem4\ecd7.i\230224.b

ARI Job No.: IB Method: PCB.m Instrument: ecd7.i Date: 24-FEB-2023

Time	Filename	LabID	ClientId	DF	Manually Integrated Compounds
1051	02242301ECD7.D	IB		1	NO MANUAL INTEGRATION
1112	02242302ECD7.D	0.25PPMAR1660		1	NO MANUAL INTEGRATION
1133	02242303ECD7.D	0.02PPMAR1660		1	NO MANUAL INTEGRATION
1154	02242304ECD7.D	0.05PPMAR1660		1	NO MANUAL INTEGRATION
1215	02242305ECD7.D	1.0PPMAR1660		1	NO MANUAL INTEGRATION
1236	02242306ECD7.D	0.1PPMAR1660		1	NO MANUAL INTEGRATION
1257	02242307ECD7.D	0.5PPMAR1660		1	NO MANUAL INTEGRATION
1318	02242308ECD7.D	0.25PPMAR1242		1	NO MANUAL INTEGRATION
1339	02242309ECD7.D	0.25PPMAR1248		1	NO MANUAL INTEGRATION
1400	02242310ECD7.D	0.25PPMAR1254		1	NO MANUAL INTEGRATION
1421	02242311ECD7.D	0.25PPMAR2162		1	NO MANUAL INTEGRATION
1442	02242312ECD7.D	0.25PPMAR3268		1	NO MANUAL INTEGRATION
1503	02242313ECD7.D	AR1660SCV		1	NO MANUAL INTEGRATION
1524	02242314ECD7.D	AR1242SCV		1	NO MANUAL INTEGRATION
1545	02242315ECD7.D	AR1248SCV		1	NO MANUAL INTEGRATION
1606	02242316ECD7.D	AR1254SCV		1	NO MANUAL INTEGRATION
1627	02242317ECD7.D	AR2162SCV		1	NO MANUAL INTEGRATION

MANUAL INTEGRATION SUMMARY FOR DATABATCH - \\target\share\chem4\ecd7.i\230224.b

Time	Filename	LabID	ClientId	DF	Manually Integrated Compounds
1648	02242318ECD7.D	AR3268SCV		1	NO MANUAL INTEGRATION
1709	02242319ECD7.D	DDTS		1	NO MANUAL INTEGRATION
1730	02242320ECD7.D	DDT BD		1	NO MANUAL INTEGRATION
1751	02242321ECD7.D			1	NO MANUAL INTEGRATION
1812	02242322ECD7.D			1	NO MANUAL INTEGRATION
1833	02242323ECD7.D			1	NO MANUAL INTEGRATION
1854	02242324ECD7.D			1	NO MANUAL INTEGRATION
1915	02242325ECD7.D			1	NO MANUAL INTEGRATION
1936	02242326ECD7.D			1	NO MANUAL INTEGRATION
1957	02242327ECD7.D			1	NO MANUAL INTEGRATION
2018	02242328ECD7.D			1	NO MANUAL INTEGRATION
2039	02242329ECD7.D			1	NO MANUAL INTEGRATION
2059	02242330ECD7.D			1	NO MANUAL INTEGRATION
2120	02242331ECD7.D			1	NO MANUAL INTEGRATION
2141	02242332ECD7.D			1	NO MANUAL INTEGRATION
2202	02242333ECD7.D			1	NO MANUAL INTEGRATION
2223	02242334ECD7.D			1	NO MANUAL INTEGRATION
2244	02242335ECD7.D			1	NO MANUAL INTEGRATION

MANUAL INTEGRATION SUMMARY FOR DATABATCH - \\target\share\chem4\ecd7.i\230224.b

Time	Filename	LabID	ClientId	DF	Manually Integrated Compounds
2305	02242336ECD7.D			1	NO MANUAL INTEGRATION
2326	02242337ECD7.D			1	NO MANUAL INTEGRATION
2347	02242338ECD7.D			1	NO MANUAL INTEGRATION
0008	02242339ECD7.D			1	NO MANUAL INTEGRATION
0029	02242340ECD7.D			1	NO MANUAL INTEGRATION
0050	02242341ECD7.D			1	NO MANUAL INTEGRATION
0111	02242342ECD7.D			1	NO MANUAL INTEGRATION
0132	02242343ECD7.D			1	NO MANUAL INTEGRATION
0153	02242344ECD7.D			1	NO MANUAL INTEGRATION
0214	02242345ECD7.D			1	NO MANUAL INTEGRATION
0235	02242346ECD7.D			1	NO MANUAL INTEGRATION
0256	02242347ECD7.D			1	NO MANUAL INTEGRATION
0317	02242348ECD7.D			1	NO MANUAL INTEGRATION
0338	02242349ECD7.D			1	NO MANUAL INTEGRATION
0359	02242350ECD7.D			1	NO MANUAL INTEGRATION
0420	02242351ECD7.D			1	NO MANUAL INTEGRATION
0441	02242352ECD7.D			1	NO MANUAL INTEGRATION
0502	02242353ECD7.D			1	NO MANUAL INTEGRATION

MANUAL INTEGRATION SUMMARY FOR DATABATCH - \\target\share\chem4\ecd7.i\230224.b

Time	Filename	LabID	ClientId	DF	Manually Integrated Compounds
0523	02242354ECD7.D			1	NO MANUAL INTEGRATION
0544	02242355ECD7.D			1	NO MANUAL INTEGRATION
0605	02242356ECD7.D			1	NO MANUAL INTEGRATION
0626	02242357ECD7.D			1	NO MANUAL INTEGRATION
0647	02242358ECD7.D			1	NO MANUAL INTEGRATION
0708	02242359ECD7.D			1	NO MANUAL INTEGRATION
0729	02242360ECD7.D			1	NO MANUAL INTEGRATION
0750	02242361ECD7.D			1	NO MANUAL INTEGRATION
0811	02242362ECD7.D			1	NO MANUAL INTEGRATION
0832	02242363ECD7.D			1	NO MANUAL INTEGRATION
0853	02242364ECD7.D			1	NO MANUAL INTEGRATION
0914	02242365ECD7.D			1	NO MANUAL INTEGRATION
0935	02242366ECD7.D			1	NO MANUAL INTEGRATION
0956	02242367ECD7.D			1	NO MANUAL INTEGRATION
1017	02242368ECD7.D			1	NO MANUAL INTEGRATION
1038	02242369ECD7.D			1	NO MANUAL INTEGRATION
1059	02242370ECD7.D			1	NO MANUAL INTEGRATION
1120	02242371ECD7.D			1	NO MANUAL INTEGRATION

MANUAL INTEGRATION SUMMARY FOR DATABATCH - \\target\share\chem4\ecd7.i\230224.b

Time	Filename	LabID	ClientId	DF	Manually Integrated Compounds
1141	02242372ECD7.D			1	NO MANUAL INTEGRATION
1202	02242373ECD7.D			1	NO MANUAL INTEGRATION
1223	02242374ECD7.D			1	NO MANUAL INTEGRATION
1244	02242375ECD7.D			1	NO MANUAL INTEGRATION
1305	02242376ECD7.D			1	NO MANUAL INTEGRATION
1326	02242377ECD7.D			1	NO MANUAL INTEGRATION
1347	02242378ECD7.D			1	NO MANUAL INTEGRATION
1408	02242379ECD7.D			1	NO MANUAL INTEGRATION
1429	02242380ECD7.D			1	NO MANUAL INTEGRATION
1450	02242381ECD7.D			1	NO MANUAL INTEGRATION
1511	02242382ECD7.D			1	NO MANUAL INTEGRATION
1532	02242383ECD7.D			1	NO MANUAL INTEGRATION
1553	02242384ECD7.D			1	NO MANUAL INTEGRATION
1051	02242301ECD7.D	IB		1	NO MANUAL INTEGRATION
1112	02242302ECD7.D	0.25PPMAR1660		1	NO MANUAL INTEGRATION
1133	02242303ECD7.D	0.02PPMAR1660		1	Aroclor-1016 [2C],
1154	02242304ECD7.D	0.05PPMAR1660		1	NO MANUAL INTEGRATION
1215	02242305ECD7.D	1.0PPMAR1660		1	NO MANUAL INTEGRATION

MANUAL INTEGRATION SUMMARY FOR DATABATCH - \\target\share\chem4\ecd7.i\230224.b\230224.b

Time	Filename	LabID	ClientId	DF	Manually Integrated Compounds
1236	02242306ECD7.D	0.1PPMAR1660		1	NO MANUAL INTEGRATION
1257	02242307ECD7.D	0.5PPMAR1660		1	NO MANUAL INTEGRATION
1318	02242308ECD7.D	0.25PPMAR1242		1	NO MANUAL INTEGRATION
1339	02242309ECD7.D	0.25PPMAR1248		1	NO MANUAL INTEGRATION
1400	02242310ECD7.D	0.25PPMAR1254		1	NO MANUAL INTEGRATION
1421	02242311ECD7.D	0.25PPMAR2162		1	NO MANUAL INTEGRATION
1442	02242312ECD7.D	0.25PPMAR3268		1	NO MANUAL INTEGRATION
1503	02242313ECD7.D	AR1660SCV		1	NO MANUAL INTEGRATION
1524	02242314ECD7.D	AR1242SCV		1	NO MANUAL INTEGRATION
1545	02242315ECD7.D	AR1248SCV		1	NO MANUAL INTEGRATION
1606	02242316ECD7.D	AR1254SCV		1	NO MANUAL INTEGRATION
1627	02242317ECD7.D	AR2162SCV		1	NO MANUAL INTEGRATION
1648	02242318ECD7.D	AR3268SCV		1	NO MANUAL INTEGRATION
1709	02242319ECD7.D	DDTS		1	NO MANUAL INTEGRATION
1730	02242320ECD7.D	DDT BD		1	NO MANUAL INTEGRATION
1751	02242321ECD7.D			1	NO MANUAL INTEGRATION
1812	02242322ECD7.D			1	NO MANUAL INTEGRATION
1833	02242323ECD7.D			1	NO MANUAL INTEGRATION

MANUAL INTEGRATION SUMMARY FOR DATABATCH - \\target\share\chem4\ecd7.i\230224.b\230224.b

Time	Filename	LabID	ClientId	DF	Manually Integrated Compounds
1854	02242324ECD7.D			1	NO MANUAL INTEGRATION
1915	02242325ECD7.D			1	NO MANUAL INTEGRATION
1936	02242326ECD7.D			1	NO MANUAL INTEGRATION
1957	02242327ECD7.D			1	NO MANUAL INTEGRATION
2018	02242328ECD7.D			1	NO MANUAL INTEGRATION
2038	02242329ECD7.D			1	NO MANUAL INTEGRATION
2059	02242330ECD7.D			1	NO MANUAL INTEGRATION
2120	02242331ECD7.D			1	NO MANUAL INTEGRATION
2141	02242332ECD7.D			1	NO MANUAL INTEGRATION
2202	02242333ECD7.D			1	NO MANUAL INTEGRATION
2223	02242334ECD7.D			1	NO MANUAL INTEGRATION
2244	02242335ECD7.D			1	NO MANUAL INTEGRATION
2305	02242336ECD7.D			1	NO MANUAL INTEGRATION
2326	02242337ECD7.D			1	NO MANUAL INTEGRATION
2347	02242338ECD7.D			1	NO MANUAL INTEGRATION
0008	02242339ECD7.D			1	NO MANUAL INTEGRATION
0029	02242340ECD7.D			1	NO MANUAL INTEGRATION
0050	02242341ECD7.D			1	NO MANUAL INTEGRATION

MANUAL INTEGRATION SUMMARY FOR DATABATCH - \\target\share\chem4\ecd7.i\230224.b\230224.b

Time	Filename	LabID	ClientId	DF	Manually Integrated Compounds
0111	02242342ECD7.D			1	NO MANUAL INTEGRATION
0132	02242343ECD7.D			1	NO MANUAL INTEGRATION
0153	02242344ECD7.D			1	NO MANUAL INTEGRATION
0214	02242345ECD7.D			1	NO MANUAL INTEGRATION
0235	02242346ECD7.D			1	NO MANUAL INTEGRATION
0256	02242347ECD7.D			1	NO MANUAL INTEGRATION
0317	02242348ECD7.D			1	NO MANUAL INTEGRATION
0338	02242349ECD7.D			1	NO MANUAL INTEGRATION
0359	02242350ECD7.D			1	NO MANUAL INTEGRATION
0420	02242351ECD7.D			1	NO MANUAL INTEGRATION
0441	02242352ECD7.D			1	NO MANUAL INTEGRATION
0502	02242353ECD7.D			1	NO MANUAL INTEGRATION
0523	02242354ECD7.D			1	NO MANUAL INTEGRATION
0544	02242355ECD7.D			1	NO MANUAL INTEGRATION
0605	02242356ECD7.D			1	NO MANUAL INTEGRATION
0626	02242357ECD7.D			1	NO MANUAL INTEGRATION
0647	02242358ECD7.D			1	NO MANUAL INTEGRATION
0708	02242359ECD7.D			1	NO MANUAL INTEGRATION

MANUAL INTEGRATION SUMMARY FOR DATABATCH - \\target\share\chem4\ecd7.i\230224.b\230224.b

Time	Filename	LabID	ClientId	DF	Manually Integrated Compounds
0729	02242360ECD7.D			1	NO MANUAL INTEGRATION
0750	02242361ECD7.D			1	NO MANUAL INTEGRATION
0811	02242362ECD7.D			1	NO MANUAL INTEGRATION
0832	02242363ECD7.D			1	NO MANUAL INTEGRATION
0853	02242364ECD7.D			1	NO MANUAL INTEGRATION
0914	02242365ECD7.D			1	NO MANUAL INTEGRATION
0935	02242366ECD7.D			1	NO MANUAL INTEGRATION
0956	02242367ECD7.D			1	NO MANUAL INTEGRATION
1017	02242368ECD7.D			1	NO MANUAL INTEGRATION
1038	02242369ECD7.D			1	NO MANUAL INTEGRATION
1059	02242370ECD7.D			1	NO MANUAL INTEGRATION
1120	02242371ECD7.D			1	NO MANUAL INTEGRATION
1141	02242372ECD7.D			1	NO MANUAL INTEGRATION
1202	02242373ECD7.D			1	NO MANUAL INTEGRATION
1223	02242374ECD7.D			1	NO MANUAL INTEGRATION
1244	02242375ECD7.D			1	NO MANUAL INTEGRATION
1305	02242376ECD7.D			1	NO MANUAL INTEGRATION
1326	02242377ECD7.D			1	NO MANUAL INTEGRATION

MANUAL INTEGRATION SUMMARY FOR DATABATCH - \\target\share\chem4\ecd7.i\230224.b\230224.b

Time	Filename	LabID	ClientId	DF	Manually Integrated Compounds
1347	02242378ECD7.D			1	NO MANUAL INTEGRATION
1408	02242379ECD7.D			1	NO MANUAL INTEGRATION
1429	02242380ECD7.D			1	NO MANUAL INTEGRATION
1450	02242381ECD7.D			1	NO MANUAL INTEGRATION
1511	02242382ECD7.D			1	NO MANUAL INTEGRATION
1532	02242383ECD7.D			1	NO MANUAL INTEGRATION
1553	02242384ECD7.D			1	NO MANUAL INTEGRATION

Security Status Report

Date: 28-Feb-2023 10:53

02242301ECD7.D	Data Locked	richardl, 28-Feb-2023 10:53
02242302ECD7.D	Data Locked	richardl, 28-Feb-2023 10:53
02242303ECD7.D	Data Locked	richardl, 28-Feb-2023 10:53
02242304ECD7.D	Data Locked	richardl, 28-Feb-2023 10:53
02242305ECD7.D	Data Locked	richardl, 28-Feb-2023 10:53
02242306ECD7.D	Data Locked	richardl, 28-Feb-2023 10:53
02242307ECD7.D	Data Locked	richardl, 28-Feb-2023 10:53
02242308ECD7.D	Data Locked	richardl, 28-Feb-2023 10:53
02242309ECD7.D	Data Locked	richardl, 28-Feb-2023 10:53
02242310ECD7.D	Data Locked	richardl, 28-Feb-2023 10:53
02242311ECD7.D	Data Locked	richardl, 28-Feb-2023 10:53
02242312ECD7.D	Data Locked	richardl, 28-Feb-2023 10:53
02242313ECD7.D	Data Locked	richardl, 28-Feb-2023 10:53
02242314ECD7.D	Data Locked	richardl, 28-Feb-2023 10:53
02242315ECD7.D	Data Locked	richardl, 28-Feb-2023 10:53
02242316ECD7.D	Data Locked	richardl, 28-Feb-2023 10:53
02242317ECD7.D	Data Locked	richardl, 28-Feb-2023 10:53
02242318ECD7.D	Data Locked	richardl, 28-Feb-2023 10:53
02242319ECD7.D	Data Locked	richardl, 28-Feb-2023 10:53
02242320ECD7.D	Data Locked	richardl, 28-Feb-2023 10:53

ARI Labs, Inc.

INITIAL CALIBRATION DATA

Start Cal Date : 24-FEB-2023 11:12
End Cal Date : 24-FEB-2023 14:42
Quant Method : ISTD
Origin : Disabled
Target Version : 4.14
Integrator : HP Genie
Method file : \\target\share\chem4\ecd7.i\230224.b\PCB.m
Last Edit : 24-Feb-2023 15:31 richardl
Curve Type : Average

Calibration File Names:
Level 1: \\target\share\chem4\ecd7.i\230224.b\02242303ECD7.D
Level 2: \\target\share\chem4\ecd7.i\230224.b\02242304ECD7.D
Level 3: \\target\share\chem4\ecd7.i\230224.b\02242306ECD7.D
Level 4: \\target\share\chem4\ecd7.i\230224.b\02242302ECD7.D
Level 5: \\target\share\chem4\ecd7.i\230224.b\02242307ECD7.D
Level 6: \\target\share\chem4\ecd7.i\230224.b\02242305ECD7.D
Level 7: \\target\share\chem4\ecd7.i\230224.b\02242312ECD7.D

Compound	20.000 Level 1	50.000 Level 2	100.000 Level 3	250.000 Level 4	500.000 Level 5	1000.000 Level 6	250.000 Level 7	___ RRF	% RSD
2 Aroclor-1221(1)	#####	#####	#####	#####	#####	#####			
	0.00716							0.00716	0.000
(2)	#####	#####	#####	#####	#####	#####			
	0.01281							0.01281	0.000
(3)	#####	#####	#####	#####	#####	#####			
	0.02975							0.02975	0.000
3 Aroclor-1242(1)	#####	#####	#####	#####	#####	#####			
	0.02479							0.02479	0.000
(2)	#####	#####	#####	#####	#####	#####			
	0.07529							0.07529	0.000
(3)	#####	#####	#####	#####	#####	#####			
	0.02343							0.02343	0.000
(4)	#####	#####	#####	#####	#####	#####			
	0.03463							0.03463	0.000
4 Aroclor-1232(1)	#####	#####	#####	#####	#####	#####			
	0.00429							0.00429	0.000

ARI Labs, Inc.

INITIAL CALIBRATION DATA

Start Cal Date : 24-FEB-2023 11:12
End Cal Date : 24-FEB-2023 14:42
Quant Method : ISTD
Origin : Disabled
Target Version : 4.14
Integrator : HP Genie
Method file : \\target\share\chem4\ecd7.i\230224.b\PCB.m
Last Edit : 24-Feb-2023 15:31 richardl
Curve Type : Average

Compound	20.000 Level 1	50.000 Level 2	100.000 Level 3	250.000 Level 4	500.000 Level 5	1000.000 Level 6	250.000 Level 7	___ RRF	% RSD
(2)	*****	*****	*****	*****	*****	*****			
	0.00850							0.00850	0.000
(3)	*****	*****	*****	*****	*****	*****			
	0.03848							0.03848	0.000
(4)	*****	*****	*****	*****	*****	*****			
	0.01635							0.01635	0.000
7 Aroclor-1016(1)	0.03172	0.03253	0.03142	0.03141	0.02856	0.02667			
	*****							0.03039	7.449
(2)	0.09239	0.09246	0.09222	0.09849	0.09174	0.08849			
	*****							0.09263	3.499
(3)	0.05165	0.05037	0.04823	0.04393	0.03991	0.03721			
	*****							0.04522	12.936
(4)	0.03002	0.02894	0.02959	0.03058	0.02852	0.02774			
	*****							0.02923	3.542
6 Aroclor-1248(1)	*****	*****	*****	*****	*****	*****			
	0.03903							0.03903	0.000
(2)	*****	*****	*****	*****	*****	*****			
	0.04961							0.04961	0.000
(3)	*****	*****	*****	*****	*****	*****			
	0.09360							0.09360	0.000
(4)	*****	*****	*****	*****	*****	*****			
	0.04765							0.04765	0.000

ARI Labs, Inc.

INITIAL CALIBRATION DATA

Start Cal Date : 24-FEB-2023 11:12
End Cal Date : 24-FEB-2023 14:42
Quant Method : ISTD
Origin : Disabled
Target Version : 4.14
Integrator : HP Genie
Method file : \\target\share\chem4\ecd7.i\230224.b\PCB.m
Last Edit : 24-Feb-2023 15:31 richardl
Curve Type : Average

Compound	20.000 Level 1	50.000 Level 2	100.000 Level 3	250.000 Level 4	500.000 Level 5	1000.000 Level 6	250.000 Level 7	___ RRF	% RSD
8 Aroclor-1254(1)	++++++	++++++	++++++	++++++	++++++	++++++	0.08033	0.08033	0.000
(2)	++++++	++++++	++++++	++++++	++++++	++++++	0.03613	0.03613	0.000
(3)	++++++	++++++	++++++	++++++	++++++	++++++	0.05165	0.05165	0.000
(4)	++++++	++++++	++++++	++++++	++++++	++++++	0.10042	0.10042	0.000
(5)	++++++	++++++	++++++	++++++	++++++	++++++	0.06294	0.06294	0.000
9 Aroclor-1260(1)	0.02926	0.02920	0.02841	0.03096	0.02737	0.02746	++++++	0.02878	4.677
(2)	0.02967	0.03006	0.03011	0.03291	0.02910	0.02857	++++++	0.03007	5.029
(3)	0.08088	0.08045	0.07954	0.08575	0.07515	0.07674	++++++	0.07975	4.627
(4)	0.03905	0.03887	0.03955	0.04485	0.03942	0.03922	++++++	0.04016	5.753
(5)	0.01783	0.01715	0.01679	0.01875	0.01664	0.01655	++++++	0.01729	4.953
10 Aroclor-1262(1)	++++++	++++++	++++++	++++++	++++++	++++++	0.02454	0.02454	0.000

ARI Labs, Inc.

INITIAL CALIBRATION DATA

Start Cal Date : 24-FEB-2023 11:12
End Cal Date : 24-FEB-2023 14:42
Quant Method : ISTD
Origin : Disabled
Target Version : 4.14
Integrator : HP Genie
Method file : \\target\share\chem4\ecd7.i\230224.b\PCB.m
Last Edit : 24-Feb-2023 15:31 richardl
Curve Type : Average

Compound	20.000 Level 1	50.000 Level 2	100.000 Level 3	250.000 Level 4	500.000 Level 5	1000.000 Level 6	250.000 Level 7	___ RRF	% RSD
(2)	++++++	++++++	++++++	++++++	++++++	++++++			
	0.03993							0.03993	0.000
(3)	++++++	++++++	++++++	++++++	++++++	++++++			
	0.04293							0.04293	0.000
(4)	++++++	++++++	++++++	++++++	++++++	++++++			
	0.03923							0.03923	0.000
11 Aroclor-1268(1)	++++++	++++++	++++++	++++++	++++++	++++++			
	0.10250							0.10250	0.000
(2)	++++++	++++++	++++++	++++++	++++++	++++++			
	0.10151							0.10151	0.000
(3)	++++++	++++++	++++++	++++++	++++++	++++++			
	0.08686							0.08686	0.000
(4)	++++++	++++++	++++++	++++++	++++++	++++++			
	0.28598							0.28598	0.000
42 2,4-DDE	++++++	++++++	++++++	++++++	++++++	++++++			
	++++++							++++++	++++++
43 2,4-DDD	++++++	++++++	++++++	++++++	++++++	++++++			
	++++++							++++++	++++++
44 2,4-DDT	++++++	++++++	++++++	++++++	++++++	++++++			
	++++++							++++++	++++++
46 4,4-DDE	++++++	++++++	++++++	++++++	++++++	++++++			
	++++++							++++++	++++++

ARI Labs, Inc.

INITIAL CALIBRATION DATA

Start Cal Date : 24-FEB-2023 11:12
End Cal Date : 24-FEB-2023 14:42
Quant Method : ISTD
Origin : Disabled
Target Version : 4.14
Integrator : HP Genie
Method file : \\target\share\chem4\ecd7.i\230224.b\PCB.m
Last Edit : 24-Feb-2023 15:31 richardl
Curve Type : Average

Compound	20.000 Level 1	50.000 Level 2	100.000 Level 3	250.000 Level 4	500.000 Level 5	1000.000 Level 6	250.000 Level 7	___ RRF	% RSD
47 4,4-DDD	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++
48 4,4-DDT	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++
49 Hexachlorobutadiene	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++
50 Hexachlorobenzene	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++
$ 1 Tetrachloro-m-xylene	1.16827	1.24402	1.18546	1.20509	1.12295	1.24114	+++++	1.19449	3.860
$ 13 Decachlorobiphenyl	0.82901	0.80558	0.77587	0.78808	0.73125	0.79742	+++++	0.78787	4.189

ARI Labs, Inc.

INITIAL CALIBRATION DATA

Start Cal Date : 24-FEB-2023 11:12
End Cal Date : 24-FEB-2023 14:42
Quant Method : ISTD
Origin : Disabled
Target Version : 4.14
Integrator : HP Genie
Method file : \\target\share\chem4\ecd7.i\230224.b\PCB.m\PCB2.m
Last Edit : 24-Feb-2023 15:29 richardl
Curve Type : Average

Calibration File Names:
Level 1: \\target\share\chem4\ecd7.i\230224.b\230224.b\02242303ECD7.D
Level 2: \\target\share\chem4\ecd7.i\230224.b\230224.b\02242304ECD7.D
Level 3: \\target\share\chem4\ecd7.i\230224.b\230224.b\02242306ECD7.D
Level 4: \\target\share\chem4\ecd7.i\230224.b\230224.b\02242302ECD7.D
Level 5: \\target\share\chem4\ecd7.i\230224.b\230224.b\02242307ECD7.D
Level 6: \\target\share\chem4\ecd7.i\230224.b\230224.b\02242305ECD7.D
Level 7: \\target\share\chem4\ecd7.i\230224.b\230224.b\02242312ECD7.D

Compound	20.000 Level 1	50.000 Level 2	100.000 Level 3	250.000 Level 4	500.000 Level 5	1000.000 Level 6	250.000 Level 7	___ RRF	% RSD
1 Aroclor-1221 [2C](1)	+++++	+++++	+++++	+++++	+++++	+++++			
	0.00757							0.00757	0.000
(2)	+++++	+++++	+++++	+++++	+++++	+++++			
	0.01433							0.01433	0.000
(3)	+++++	+++++	+++++	+++++	+++++	+++++			
	0.02333							0.02333	0.000
4 Aroclor-1232 [2C](1)	+++++	+++++	+++++	+++++	+++++	+++++			
	0.00409							0.00409	0.000
(2)	+++++	+++++	+++++	+++++	+++++	+++++			
	0.02034							0.02034	0.000
(3)	+++++	+++++	+++++	+++++	+++++	+++++			
	0.04067							0.04067	0.000
(4)	+++++	+++++	+++++	+++++	+++++	+++++			
	0.01170							0.01170	0.000
3 Aroclor-1242 [2C](1)	+++++	+++++	+++++	+++++	+++++	+++++			
	0.03717							0.03717	0.000

ARI Labs, Inc.

INITIAL CALIBRATION DATA

Start Cal Date : 24-FEB-2023 11:12
End Cal Date : 24-FEB-2023 14:42
Quant Method : ISTD
Origin : Disabled
Target Version : 4.14
Integrator : HP Genie
Method file : \\target\share\chem4\ecd7.i\230224.b\PCB.m\PCB2.m
Last Edit : 24-Feb-2023 15:29 richardl
Curve Type : Average

Compound	20.000 Level 1	50.000 Level 2	100.000 Level 3	250.000 Level 4	500.000 Level 5	1000.000 Level 6	250.000 Level 7	___ RRF	% RSD
(2)	+++++	+++++	+++++	+++++	+++++	+++++			
	0.07813							0.07813	0.000
(3)	+++++	+++++	+++++	+++++	+++++	+++++			
	0.02431							0.02431	0.000
(4)	+++++	+++++	+++++	+++++	+++++	+++++			
	0.02962							0.02962	0.000
6 Aroclor-1248 [2C](1)	+++++	+++++	+++++	+++++	+++++	+++++			
	0.03820							0.03820	0.000
(2)	+++++	+++++	+++++	+++++	+++++	+++++			
	0.03949							0.03949	0.000
(3)	+++++	+++++	+++++	+++++	+++++	+++++			
	0.04545							0.04545	0.000
(4)	+++++	+++++	+++++	+++++	+++++	+++++			
	0.05457							0.05457	0.000
7 Aroclor-1016 [2C](1)	0.05071	0.05022	0.04868	0.04733	0.04326	0.04080			
	+++++							0.04683	8.503
(2)	0.08143	0.09407	0.10159	0.10259	0.09651	0.09362			
	+++++							0.09497	8.025
(3)	0.04006	0.04718	0.04613	0.04410	0.04062	0.03926			
	+++++							0.04289	7.857
(4)	0.03181	0.03802	0.03707	0.03450	0.03115	0.02936			
	+++++							0.03365	10.251

ARI Labs, Inc.

INITIAL CALIBRATION DATA

Start Cal Date : 24-FEB-2023 11:12
End Cal Date : 24-FEB-2023 14:42
Quant Method : ISTD
Origin : Disabled
Target Version : 4.14
Integrator : HP Genie
Method file : \\target\share\chem4\ecd7.i\230224.b\PCB.m\PCB2.m
Last Edit : 24-Feb-2023 15:29 richardl
Curve Type : Average

Compound	20.000 Level 1	50.000 Level 2	100.000 Level 3	250.000 Level 4	500.000 Level 5	1000.000 Level 6	250.000 Level 7	___ RRF	% RSD
8 Aroclor-1254 [2C](1)	#####	#####	#####	#####	#####	#####	0.06081	0.06081	0.000
(2)	#####	#####	#####	#####	#####	#####	0.04892	0.04892	0.000
(3)	#####	#####	#####	#####	#####	#####	0.10584	0.10584	0.000
(4)	#####	#####	#####	#####	#####	#####	0.10317	0.10317	0.000
(5)	#####	#####	#####	#####	#####	#####	0.06282	0.06282	0.000
10 Aroclor-1262 [2C](1)	#####	#####	#####	#####	#####	#####	0.06831	0.06831	0.000
(2)	#####	#####	#####	#####	#####	#####	0.05818	0.05818	0.000
(3)	#####	#####	#####	#####	#####	#####	0.06601	0.06601	0.000
(4)	#####	#####	#####	#####	#####	#####	0.10341	0.10341	0.000
9 Aroclor-1260 [2C](1)	0.05286	0.04911	0.04696	0.04801	0.04329	0.04201	#####	0.04704	8.422
(2)	0.12976	0.12431	0.12095	0.12664	0.11320	0.10545	#####	0.12005	7.605

ARI Labs, Inc.

INITIAL CALIBRATION DATA

Start Cal Date : 24-FEB-2023 11:12
End Cal Date : 24-FEB-2023 14:42
Quant Method : ISTD
Origin : Disabled
Target Version : 4.14
Integrator : HP Genie
Method file : \\target\share\chem4\ecd7.i\230224.b\PCB.m\PCB2.m
Last Edit : 24-Feb-2023 15:29 richardl
Curve Type : Average

Compound	20.000 Level 1	50.000 Level 2	100.000 Level 3	250.000 Level 4	500.000 Level 5	1000.000 Level 6	250.000 Level 7	___ RRF	% RSD
(3)	0.03524	0.03147	0.02937	0.03208	0.03102	0.03198	#####	0.03186	6.045
(4)	0.08632	0.08237	0.08044	0.08393	0.07718	0.07531	#####	0.08092	5.126
11 Aroclor-1268 [2C](1)	#####	#####	#####	#####	#####	#####	0.16109	0.16109	0.000
(2)	#####	#####	#####	#####	#####	#####	0.17318	0.17318	0.000
(3)	#####	#####	#####	#####	#####	#####	0.14787	0.14787	0.000
(4)	#####	#####	#####	#####	#####	#####	0.47260	0.47260	0.000
41 2,4-DDE [2C]	#####	#####	#####	#####	#####	#####	#####	#####	#####
42 2,4-DDD [2C]	#####	#####	#####	#####	#####	#####	#####	#####	#####
44 4,4-DDE [2C]	#####	#####	#####	#####	#####	#####	#####	#####	#####
45 4,4-DDD/2,4-DDT [2C]	#####	#####	#####	#####	#####	#####	#####	#####	#####
46 4,4-DDT [2C]	#####	#####	#####	#####	#####	#####	#####	#####	#####

ARI Labs, Inc.

INITIAL CALIBRATION DATA

Start Cal Date : 24-FEB-2023 11:12
End Cal Date : 24-FEB-2023 14:42
Quant Method : ISTD
Origin : Disabled
Target Version : 4.14
Integrator : HP Genie
Method file : \\target\share\chem4\ecd7.i\230224.b\PCB.m\PCB2.m
Last Edit : 24-Feb-2023 15:29 richardl
Curve Type : Average

Compound	20.000 Level 1	50.000 Level 2	100.000 Level 3	250.000 Level 4	500.000 Level 5	1000.000 Level 6	250.000 Level 7	___ RRF	% RSD
48 Hexachlorobutadiene	+++++ +++++	+++++	+++++	+++++	+++++	+++++		+++++	+++++
49 Hexachlorobenzene	+++++ +++++	+++++	+++++	+++++	+++++	+++++		+++++	+++++
$ 2 Tetrachloro-m-xylene [2C]	1.21526 +++++	1.19545	1.17555	1.21907	1.12560	1.11139		1.17372	3.897
$ 13 Decachlorobiphenyl [2C]	1.17066 +++++	1.20406	1.20549	1.31040	1.21104	1.20797		1.21827	3.898

ARI Labs, Inc.
RETENTION TIME SUMMARY REPORT

Method File: \\target\share\chem4\ecd7.i\230224.b\PCB.m
Batch File: \\target\share\chem4\ecd7.i\230224.b
Inst ID: ecd7.i

ID:	RT01	RT02	RT03	RT04	RT05	RT06
FILENAME:	02242302ECD7	02242303ECD7	02242304ECD7	02242305ECD7	02242306ECD7	02242307ECD7
INJ.DATE:	24-FEB-2023	24-FEB-2023	24-FEB-2023	24-FEB-2023	24-FEB-2023	24-FEB-2023
INJ.TIME:	11:12	11:33	11:54	12:15	12:36	12:57

Compound	RT01	RT02	RT03	RT04	RT05	RT06	EXPEC RT	RT WINDOW	AVG RT	STD DEV
* 41 IS-BNB	3.493	3.492	3.492	3.492	3.491	3.491	3.493	3.393-3.593	3.492	0.001
$ 1 Tetrachloro-m-xylene	5.811	5.809	5.809	5.813	5.809	5.810	5.811	5.711-5.911	5.810	0.002
2 Aroclor-1221	+++++	+++++	+++++	+++++	+++++	+++++	4.732	4.632-4.832	+++++	+++++
3 Aroclor-1242	+++++	+++++	+++++	+++++	+++++	+++++	7.269	7.169-7.369	+++++	+++++
4 Aroclor-1232	+++++	+++++	+++++	+++++	+++++	+++++	4.732	4.632-4.832	+++++	+++++
7 Aroclor-1016	7.272	7.272	7.272	7.270	7.271	7.270	7.272	7.172-7.372	7.271	0.001
6 Aroclor-1248	+++++	+++++	+++++	+++++	+++++	+++++	8.403	8.303-8.503	+++++	+++++
8 Aroclor-1254	+++++	+++++	+++++	+++++	+++++	+++++	9.295	9.195-9.395	+++++	+++++
9 Aroclor-1260	11.046	11.047	11.046	11.044	11.045	11.044	11.046	10.946-11.146	11.045	0.001
10 Aroclor-1262	+++++	+++++	+++++	+++++	+++++	+++++	10.824	10.724-10.924	+++++	+++++
11 Aroclor-1268	+++++	+++++	+++++	+++++	+++++	+++++	12.243	12.143-12.343	+++++	+++++
$ 13 Decachlorobiphenyl	13.897	13.893	13.893	13.899	13.892	13.898	13.897	13.797-13.997	13.895	0.003
* 12 IS-HBBP	14.269	14.268	14.268	14.267	14.268	14.268	14.269	14.169-14.369	14.268	0.001
42 2,4-DDE	+++++	+++++	+++++	+++++	+++++	+++++	9.260	9.210-9.310	+++++	+++++
43 2,4-DDD	+++++	+++++	+++++	+++++	+++++	+++++	9.801	9.751-9.851	+++++	+++++
44 2,4-DDT	+++++	+++++	+++++	+++++	+++++	+++++	10.293	10.243-10.343	+++++	+++++
46 4,4-DDE	+++++	+++++	+++++	+++++	+++++	+++++	9.683	9.583-9.783	+++++	+++++

Reviewer 1 _____ Date: _____
Reviewer 2 _____ Date: _____

ARI Labs, Inc.
RETENTION TIME SUMMARY REPORT

Method File: \\target\share\chem4\ecd7.i\230224.b\PCB.m
Batch File: \\target\share\chem4\ecd7.i\230224.b
Inst ID: ecd7.i

Compound	RT01	RT02	RT03	RT04	RT05	RT06	EXPEC RT	RT WINDOW	AVG RT	STD DEV
47 4,4-DDD	+++++	+++++	+++++	+++++	+++++	+++++	10.254	10.154-10.354	+++++	+++++
48 4,4-DDT	+++++	+++++	+++++	+++++	+++++	+++++	10.754	10.654-10.854	+++++	+++++
49 Hexachlorobutadiene	+++++	+++++	+++++	+++++	+++++	+++++	1.842	1.742-1.942	+++++	+++++
50 Hexachlorobenzene	+++++	+++++	+++++	+++++	+++++	+++++	6.708	6.608-6.808	+++++	+++++

ARI Labs, Inc.
RETENTION TIME SUMMARY REPORT

Method File: \\target\share\chem4\ecd7.i\230224.b\PCB.m\PCB2.m
Batch File: \\target\share\chem4\ecd7.i\230224.b\230224.b
Inst ID: ecd7.i

ID:	RT01	RT02	RT03	RT04	RT05	RT06
FILENAME:	02242302ECD7	02242303ECD7	02242304ECD7	02242305ECD7	02242306ECD7	02242307ECD7
INJ.DATE:	24-FEB-2023	24-FEB-2023	24-FEB-2023	24-FEB-2023	24-FEB-2023	24-FEB-2023
INJ.TIME:	11:12	11:33	11:54	12:15	12:36	12:57

Compound	RT01	RT02	RT03	RT04	RT05	RT06	EXPEC RT	RT WINDOW	AVG RT	STD DEV
* 40 IS-BNB [2C]	3.928	3.929	3.929	3.929	3.928	3.929	3.928	3.828-4.028	3.929	0.000
$ 2 Tetrachloro-m-xylene [	5.687	5.688	5.688	5.688	5.688	5.688	5.687	5.587-5.787	5.688	0.001
1 Aroclor-1221 [2C]	+++++	+++++	+++++	+++++	+++++	+++++	4.958	4.858-5.058	+++++	+++++
4 Aroclor-1232 [2C]	+++++	+++++	+++++	+++++	+++++	+++++	4.958	4.859-5.059	+++++	+++++
3 Aroclor-1242 [2C]	+++++	+++++	+++++	+++++	+++++	+++++	7.254	7.154-7.354	+++++	+++++
6 Aroclor-1248 [2C]	+++++	+++++	+++++	+++++	+++++	+++++	8.305	8.205-8.405	+++++	+++++
7 Aroclor-1016 [2C]	7.255	7.256	7.256	7.254	7.255	7.256	7.255	7.155-7.355	7.255	0.001
8 Aroclor-1254 [2C]	+++++	+++++	+++++	+++++	+++++	+++++	9.447	9.347-9.547	+++++	+++++
10 Aroclor-1262 [2C]	+++++	+++++	+++++	+++++	+++++	+++++	11.198	11.098-11.298	+++++	+++++
9 Aroclor-1260 [2C]	11.653	11.656	11.655	11.652	11.655	11.653	11.653	11.553-11.753	11.654	0.001
11 Aroclor-1268 [2C]	+++++	+++++	+++++	+++++	+++++	+++++	12.431	12.331-12.531	+++++	+++++
$ 13 Decachlorobiphenyl [2C	14.120	14.120	14.119	14.122	14.119	14.120	14.120	14.020-14.220	14.120	0.001
* 12 IS-HBBP [2C]	15.008	15.008	15.008	15.008	15.007	15.008	15.008	14.908-15.108	15.008	0.000
41 2,4-DDE [2C]	+++++	+++++	+++++	+++++	+++++	+++++	9.911	9.861-9.961	+++++	+++++
42 2,4-DDD [2C]	+++++	+++++	+++++	+++++	+++++	+++++	9.536	9.486-9.586	+++++	+++++
44 4,4-DDE [2C]	+++++	+++++	+++++	+++++	+++++	+++++	10.209	10.109-10.309	+++++	+++++
45 4,4-DDD/2,4-DDT [2C]	+++++	+++++	+++++	+++++	+++++	+++++	10.667	10.567-10.767	+++++	+++++

Reviewer 1 _____ Date:_____
Reviewer 2 _____ Date:_____

ARI Labs, Inc.
RETENTION TIME SUMMARY REPORT

Method File: \\target\share\chem4\ecd7.i\230224.b\PCB.m\PCB2.m
Batch File: \\target\share\chem4\ecd7.i\230224.b\230224.b
Inst ID: ecd7.i

Compound	RT01	RT02	RT03	RT04	RT05	RT06	EXPEC RT	RT WINDOW	AVG RT	STD DEV
46 4,4-DDT [2C]	+++++	+++++	+++++	+++++	+++++	+++++	11.092	10.992-11.192	+++++	+++++
48 Hexachlorobutadiene	+++++	+++++	+++++	+++++	+++++	+++++	1.703	1.603-1.803	+++++	+++++
49 Hexachlorobenzene	+++++	+++++	+++++	+++++	+++++	+++++	7.178	7.078-7.278	+++++	+++++

Analytical Resources Inc.
Dual Column 608/8082 PCB Quantitation Report

Data file 1: /230224.b/02242301ECD7.D
Data file 2: /230224.b/230224.b/02242301ECD7.D
Method: \\target\share\chem4\ecd7.i\230224.b\PCB.m
Compound Sublist: PCB.sub
Instrument, Inj. Vol.: ecd7.i, 2ul
Quant Method: Internal Std

ARI ID: IB
Client ID:
Injection Date: 24-FEB-2023 10:51
Report Date: 02/28/2023 09:50
Matrix: NONE
Dilution Factor: 1.0

SURROGATES

ZB5 Col RT	ZB5 Col Shift	ZB5 Col Response	ZB35 Col RT	ZB35 Col Shift	ZB35 Col Response	ZB5 on col	ZB35 on col	RPD	Compound/Flag
5.826	0.019	382217	5.683	-0.002	180378	33.8	36.5	7.7	Tetrachloro-m-xylene
13.904	0.011	534110	14.120	0.001	295605	35.3	37.2	5.2	Decachlorobiphenyl

* Indicates RPD > 40%

INTERNAL STANDARD SUMMARY

Column 1

Standard Cpnd	Standard Area*	Sample Area	%D
Bromo-Nitrobenzene	673778	756896	12.3
Hexabromobiphenyl	1429847	1534275	7.3

Column 2

Standard Cpnd	Standard Area*	Sample Area	%D
Bromo-Nitrobenzene	315256	336543	6.8
Hexabromobiphenyl	513946	521508	1.5

* Standard Areas taken from Initial Cal Level 3
Initial Calibration Date: 24-FEB-2023
<- Indicates standard response outside Limits (-50 to +100%)

	ZB5 Col					ZB35 Col				
Aroclor	Peak#	RT	Shift	Area	Amount	Peak#	RT	Shift	Area	Amount
Aroclor-1016	1	---			0.0	1	---			0.0
Aroclor-1016	2	---			0.0	2	---			0.0
Aroclor-1016	3	---			0.0	3	---			0.0
Aroclor-1016	4	---			0.0	4	---			0.0
	Col1Ave: <3 Quant Peaks					Col2Ave: <3 Quant Peaks				
Aroclor-1221	1	---			0.0	1	---			0.0
Aroclor-1221	2	---			0.0	2	6.321	0.025	1873	31.1
Aroclor-1221	3	---			0.0	3	6.633	0.012	314	3.2
	Col1Ave: <3 Quant Peaks					Col2Ave: <3 Quant Peaks				
Aroclor-1232	1	---			0.0	1	---			0.0
Aroclor-1232	2	---			0.0	2	---			0.0
Aroclor-1232	3	7.698	0.043	2193	6.0	3	---			0.0
Aroclor-1232	4	8.505	-0.076	11525	74.5	4	---			0.0
	Col1Ave: <3 Quant Peaks					Col2Ave: <3 Quant Peaks				
Aroclor-1242	1	---			0.0	1	---			0.0
Aroclor-1242	2	7.698	0.042	2193	3.1	2	---			0.0
Aroclor-1242	3	---			0.0	3	---			0.0
Aroclor-1242	4	8.505	-0.074	11525	35.2	4	---			0.0
	Col1Ave: <3 Quant Peaks					Col2Ave: <3 Quant Peaks				
Aroclor-1248	1	---			0.0	1	---			0.0
Aroclor-1248	2	---			0.0	2	---			0.0
Aroclor-1248	3	---			0.0	3	---			0.0
Aroclor-1248	4	---			0.0	4	---			0.0
	Col1Ave: <3 Quant Peaks					Col2Ave: <3 Quant Peaks				
Aroclor-1254	1	---			0.0	1	---			0.0
Aroclor-1254	2	---			0.0	2	---			0.0
Aroclor-1254	3	9.596	-0.072	31424	64.3	3	---			0.0
Aroclor-1254	4	---			0.0	4	---			0.0
Aroclor-1254	5	10.167	-0.010	18361	30.8	5	---			0.0
	Col1Ave: <3 Quant Peaks					Col2Ave: <3 Quant Peaks				
Aroclor-1260	1	11.098	0.054	6994	12.7	1	---			0.0
Aroclor-1260	2	---			0.0	2	---			0.0
Aroclor-1260	3	11.706	-0.027	7806	5.1	3	---			0.0
Aroclor-1260	4	---			0.0	4	---			0.0
Aroclor-1260	5	---			0.0	NS	---			----
	Col1Ave: <3 Quant Peaks					Col2Ave: <3 Quant Peaks				
Aroclor-1262	1	10.824	-0.005	16873	35.8	1	---			0.0
Aroclor-1262	2	---			0.0	2	---			0.0
Aroclor-1262	3	---			0.0	3	---			0.0
Aroclor-1262	4	13.040	0.053	14031	18.6	4	---			0.0
	Col1Ave: <3 Quant Peaks					Col2Ave: <3 Quant Peaks				
Aroclor-1268	1	---			0.0	1	---			0.0
Aroclor-1268	2	---			0.0	2	---			0.0
Aroclor-1268	3	12.709	0.009	6037	3.6	3	12.891	-0.001	659	0.7
Aroclor-1268	4	13.499	0.010	12396	2.3	4	13.710	0.001	1848	0.6
	Col1Ave: <3 Quant Peaks					Col2Ave: <3 Quant Peaks				

Total PCB Area Col1 (5.906 - 13.793) = 260205 Col1 Total PCB = 0.0 ppm*

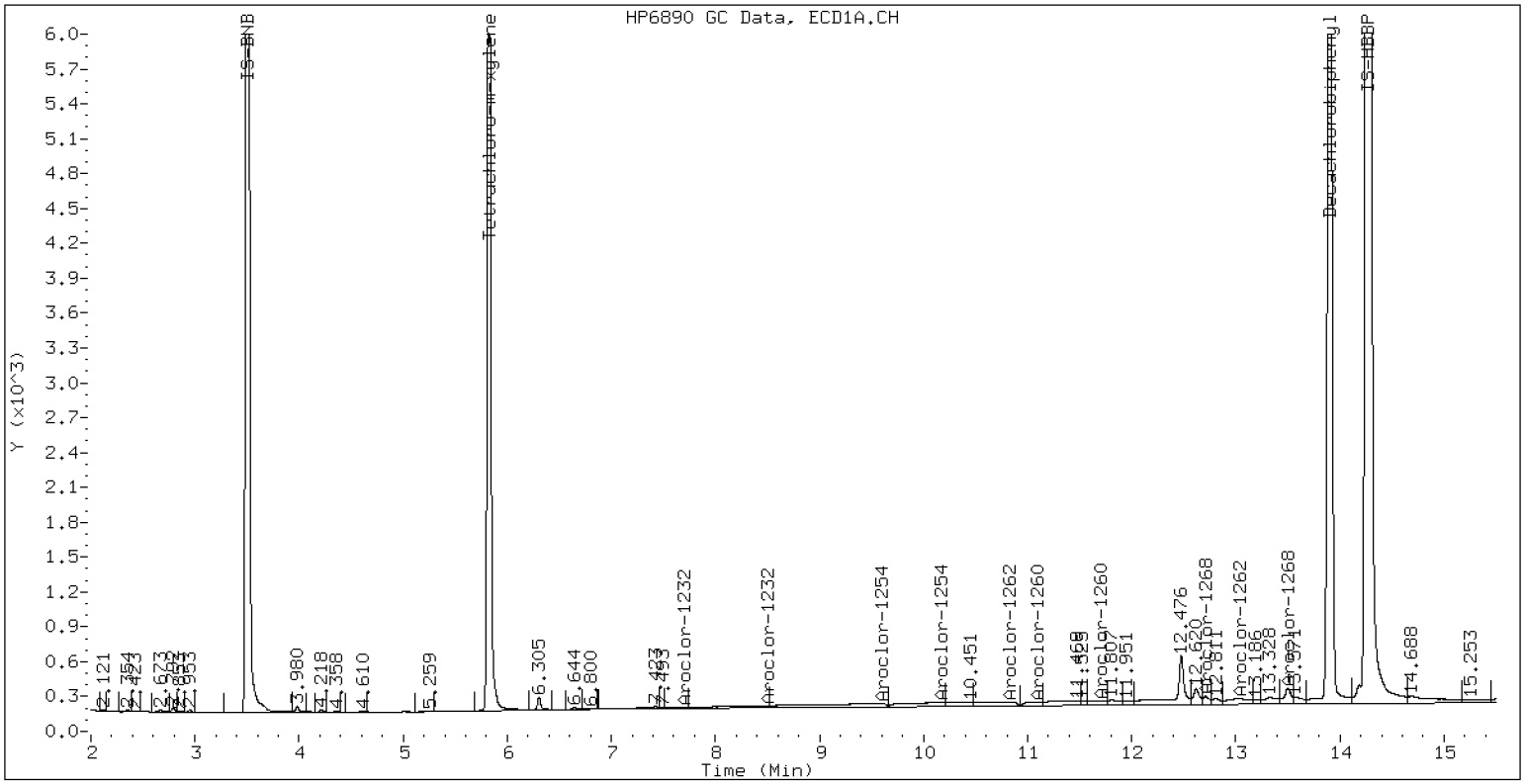
Total PCB Area Col2 (5.785 - 14.019) = 18252 Col2 Total PCB = 0.0 ppm*

* Quantitated against AR1660 0.25ppm in Ical

PCB-Form 10 Mod.

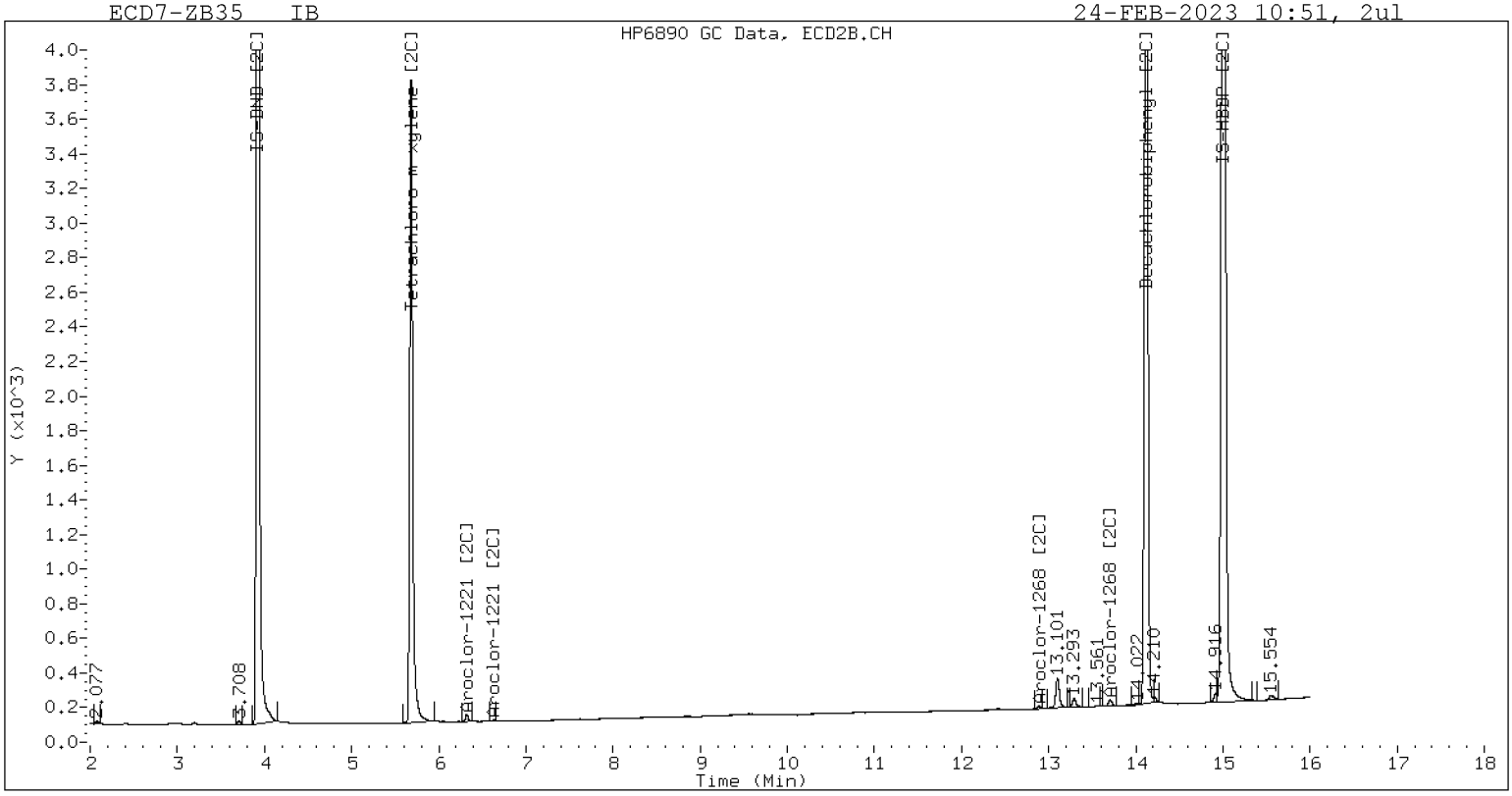
PCB Dual Column Chromatograms

ECD7-ZB5 IB 24-FEB-2023 10:51, 2ul



ZB-5 Manual Integration: NO

ECD7-ZB35 IB 24-FEB-2023 10:51, 2ul



ZB-35 Manual Integration: NO

Analytical Resources Inc.
Dual Column 608/8082 PCB Quantitation Report

Data file 1: /230224.b/02242302ECD7.D
Data file 2: /230224.b/230224.b/02242302ECD7.D
Method: \\target\share\chem4\ecd7.i\230224.b\PCB.m
Compound Sublist: AR1660.sub
Instrument, Inj. Vol.: ecd7.i, 2ul
Quant Method: Internal Std

ARI ID: 0.25PPMAR1660
Client ID:
Injection Date: 24-FEB-2023 11:12
Report Date: 02/28/2023 09:50
Matrix: NONE
Dilution Factor: 1.0

SURROGATES

ZB5 Col RT	ZB5 Col Shift	ZB5 Col Response	ZB35 Col RT	ZB35 Col Shift	ZB35 Col Response	ZB5 on col	ZB35 on col	RPD	Compound/Flag
5.811	0.005	405980	5.687	0.002	192160	40.4	41.5	2.9	Tetrachloro-m-xylene
13.897	0.004	563414	14.120	0.001	336737	40.0	43.0	7.3	Decachlorobiphenyl

* Indicates RPD > 40%

INTERNAL STANDARD SUMMARY

Column 1

Standard Cpnd	Standard Area*	Sample Area	%D
Bromo-Nitrobenzene	673778	673778	0.0
Hexabromobiphenyl	1429847	1429847	0.0

Column 2

Standard Cpnd	Standard Area*	Sample Area	%D
Bromo-Nitrobenzene	315256	315256	0.0
Hexabromobiphenyl	513946	513946	0.0

* Standard Areas taken from Initial Cal Level 3
Initial Calibration Date: 24-FEB-2023
<- Indicates standard response outside Limits (-50 to +100%)

Aroclor	Peak#	RT (ZB5 Col)	Shift	Area	Amount	Peak#	RT (ZB35 Col)	Shift	Area	Amount
Aroclor-1016	1	7.272	0.001	66125	258.4	1	7.255	-0.001	46626	252.6
Aroclor-1016	2	7.654	-0.000	207370	265.8	2	7.855	-0.001	101071	270.1
Aroclor-1016	3	7.792	0.002	92507	242.9	3	8.055	0.001	43448	257.1
Aroclor-1016	4	8.406	0.001	64388	261.5	4	8.306	-0.000	33986	256.3

Total Col1Ave (4 peaks): 257.2 Total Col2Ave (4 peaks): 259.0 RPD = 1

Corrected Ave (3 peaks): 254.3 Corrected Ave (3 peaks): 255.3 RPD = 0

CalAmt %D: 2.9 CalAmt %D: 3.6

Aroclor-1260	1	11.046	0.001	138355	269.0	1	11.653	0.001	77114	255.2
Aroclor-1260	2	11.363	0.002	147051	273.6	2	11.918	0.001	203401	263.7
Aroclor-1260	3	11.736	0.003	383171	268.8	3	12.435	-0.000	51517	251.7
Aroclor-1260	4	12.141	0.002	200399	279.2	4	12.502	0.001	134797	259.3
Aroclor-1260	5	12.247	0.003	83796	271.2	NS	---			----

Total Col1Ave (5 peaks): 272.4 Total Col2Ave (4 peaks): 257.5 RPD = 6

Corrected Ave (4 peaks): 270.7 Corrected Ave (3 peaks): 255.4 RPD = 6

CalAmt %D: 8.9 CalAmt %D: 3.0

Total PCB Area Col1 (5.906 - 13.793) = 4024419 Col1 Total PCB = 0.5 ppm*

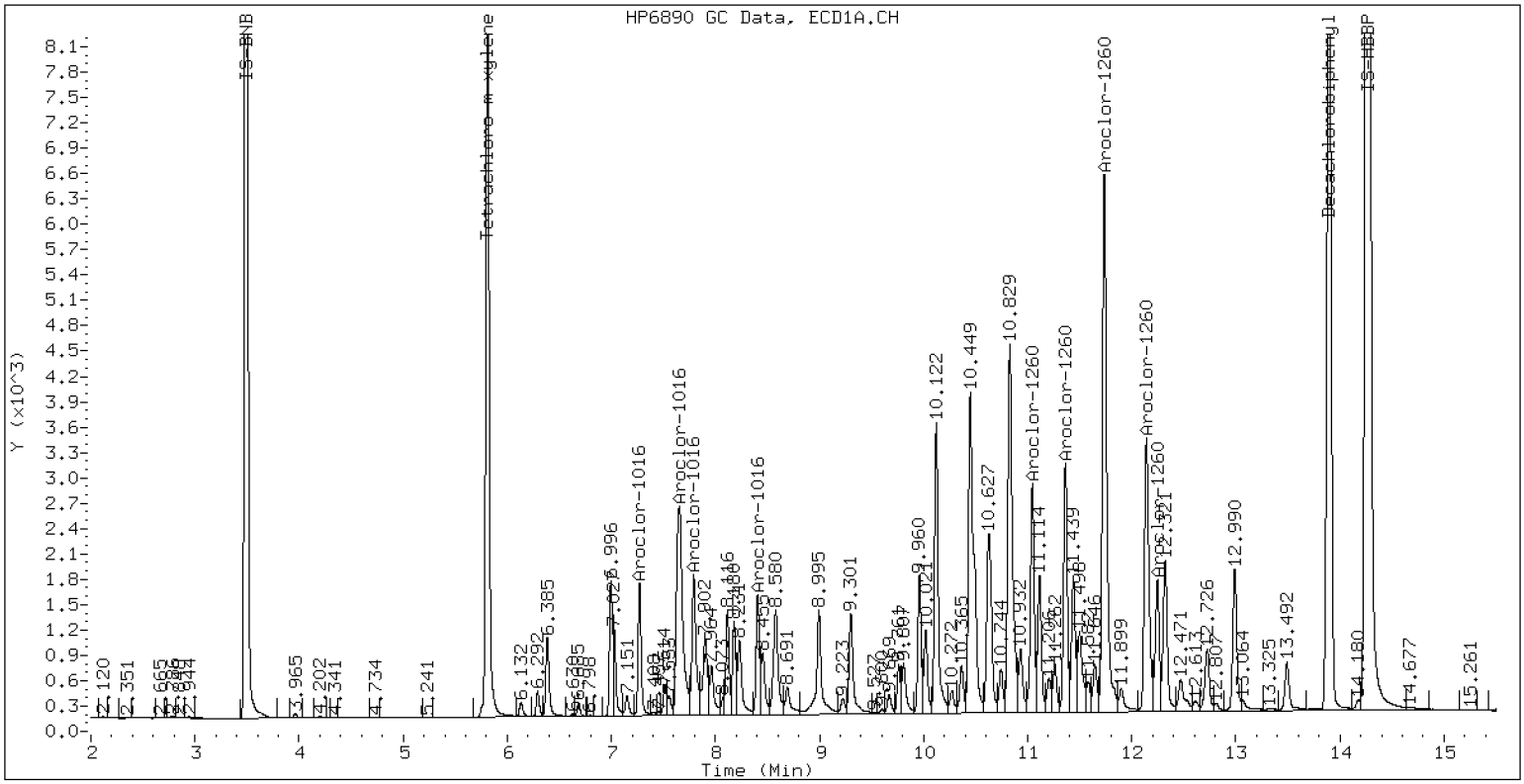
Total PCB Area Col2 (5.785 - 14.019) = 1889311 Col2 Total PCB = 0.5 ppm*

* Quantitated against AR1660 0.25ppm in Ical

PCB-Form 10 Mod.

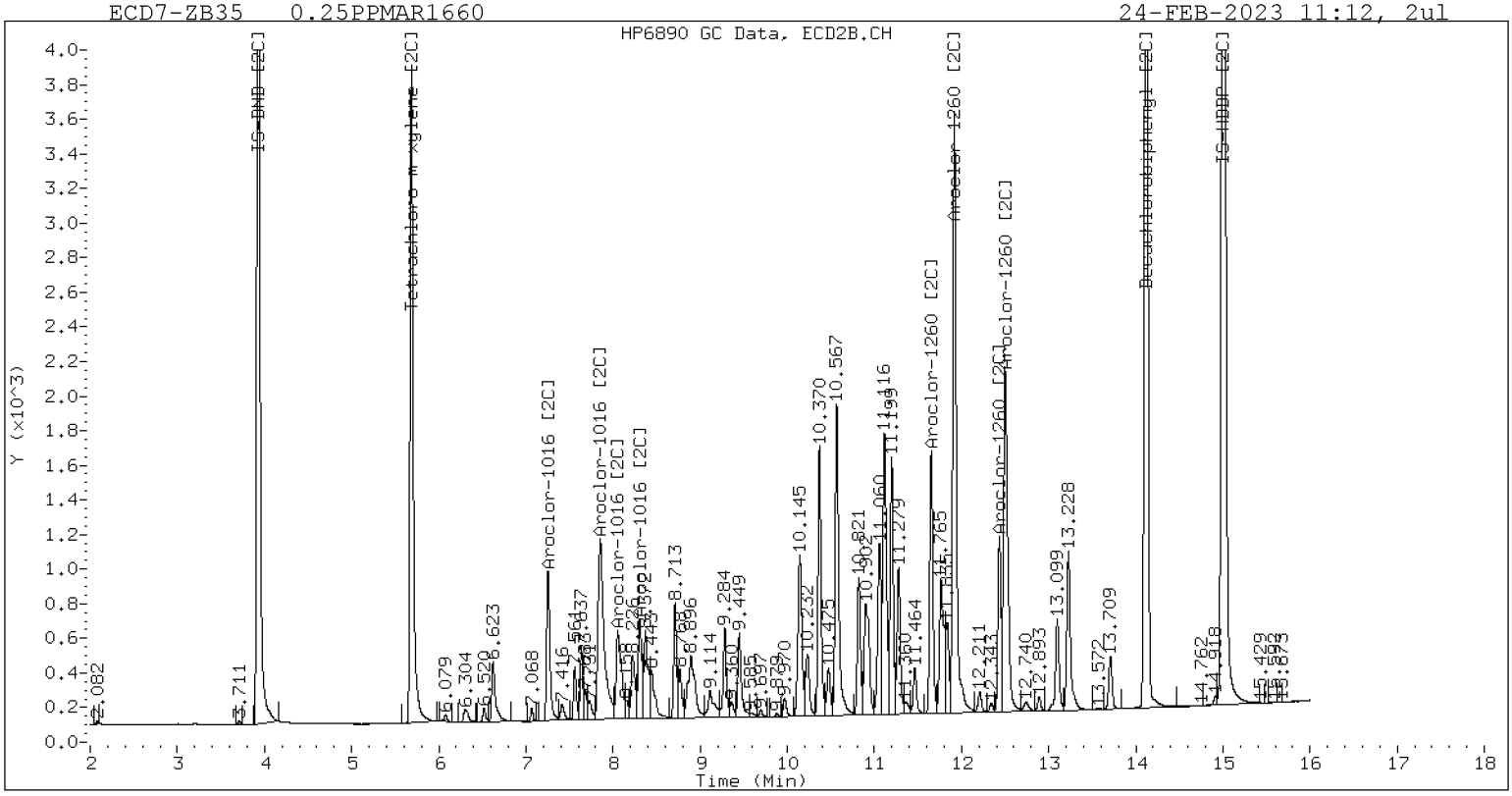
PCB Dual Column Chromatograms

ECD7-ZB5 0.25PPMAR1660 24-FEB-2023 11:12, 2ul



ZB-5 Manual Integration: NO

ECD7-ZB35 0.25PPMAR1660 24-FEB-2023 11:12, 2ul



ZB-35 Manual Integration: NO

Analytical Resources Inc.
Dual Column 608/8082 PCB Quantitation Report

Data file 1: /230224.b/02242303ECD7.D
Data file 2: /230224.b/230224.b/02242303ECD7.D
Method: \\target\share\chem4\ecd7.i\230224.b\PCB.m
Compound Sublist: AR1660.sub
Instrument, Inj. Vol.: ecd7.i, 2ul
Quant Method: Internal Std

ARI ID: 0.02PPMAR1660
Client ID:
Injection Date: 24-FEB-2023 11:33
Report Date: 02/28/2023 09:50
Matrix: NONE
Dilution Factor: 1.0

SURROGATES

ZB5 Col			ZB35 Col			ZB5	ZB35		
RT	Shift	Response	RT	Shift	Response	on col	on col	RPD	Compound/Flag
5.809	0.002	29768	5.688	0.003	14932	3.1	3.3	5.7	Tetrachloro-m-xylene
13.893	0.000	45992	14.120	0.000	23950	3.4	3.1	9.1	Decachlorobiphenyl

* Indicates RPD > 40%

INTERNAL STANDARD SUMMARY

Column 1

Standard Cpnd	Standard Area*	Sample Area	%D
Bromo-Nitrobenzene	673778	637010	-5.5
Hexabromobiphenyl	1429847	1386953	-3.0

Column 2

Standard Cpnd	Standard Area*	Sample Area	%D
Bromo-Nitrobenzene	315256	307177	-2.6
Hexabromobiphenyl	513946	511463	-0.5

* Standard Areas taken from Initial Cal Level 3
Initial Calibration Date: 24-FEB-2023
<- Indicates standard response outside Limits (-50 to +100%)

	ZB5 Col				ZB35 Col				
Aroclor	Peak#	RT	Shift	Area	Amount	Peak#	RT	Shift	Area	Amount
Aroclor-1016	1	7.272	0.001	5052	20.9	1	7.256	0.000	3894	21.7
Aroclor-1016	2	7.659	0.005	14714	19.9	2	7.864	0.008	6253	17.1
Aroclor-1016	3	7.795	0.005	8226	22.8	3	8.060	0.006	3076	18.7
Aroclor-1016	4	8.407	0.002	4780	20.5	4	8.309	0.002	2443	18.9

Total Col1Ave (4 peaks): 21.1 Total Col2Ave (4 peaks): 19.1 RPD = 10
Corrected Ave (3 peaks): 20.5 Corrected Ave (3 peaks): 18.2 RPD = 11

CalAmt %D: 5.3 CalAmt %D: -4.5

Aroclor-1260	1	11.047	0.003	10147	20.3	1	11.656	0.003	6759	22.5
Aroclor-1260	2	11.364	0.003	10287	19.7	2	11.922	0.005	16592	21.6
Aroclor-1260	3	11.740	0.006	28043	20.3	3	12.438	0.002	4506	22.1
Aroclor-1260	4	12.145	0.006	13540	19.4	4	12.505	0.004	11037	21.3
Aroclor-1260	5	12.246	0.002	6182	20.6	NS	---			----

Total Col1Ave (5 peaks): 20.1 Total Col2Ave (4 peaks): 21.9 RPD = 9
Corrected Ave (4 peaks): 19.9 Corrected Ave (3 peaks): 21.7 RPD = 8

CalAmt %D: 0.4 CalAmt %D: 9.4

Total PCB Area Col1 (5.906 - 13.793) = 324832 Col1 Total PCB = 0.0 ppm*

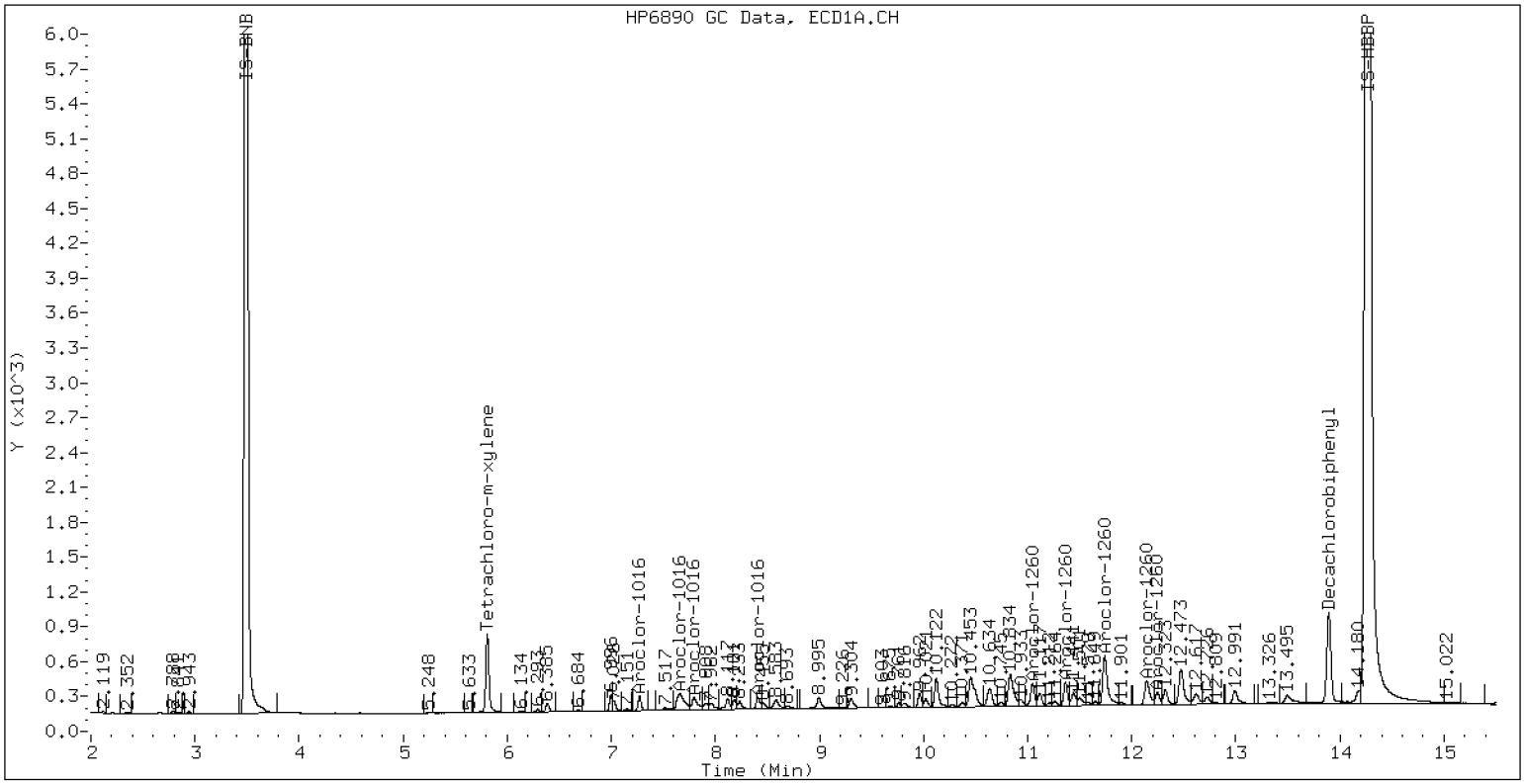
Total PCB Area Col2 (5.785 - 14.019) = 157149 Col2 Total PCB = 0.0 ppm*

* Quantitated against AR1660 0.25ppm in Ical

PCB-Form 10 Mod.

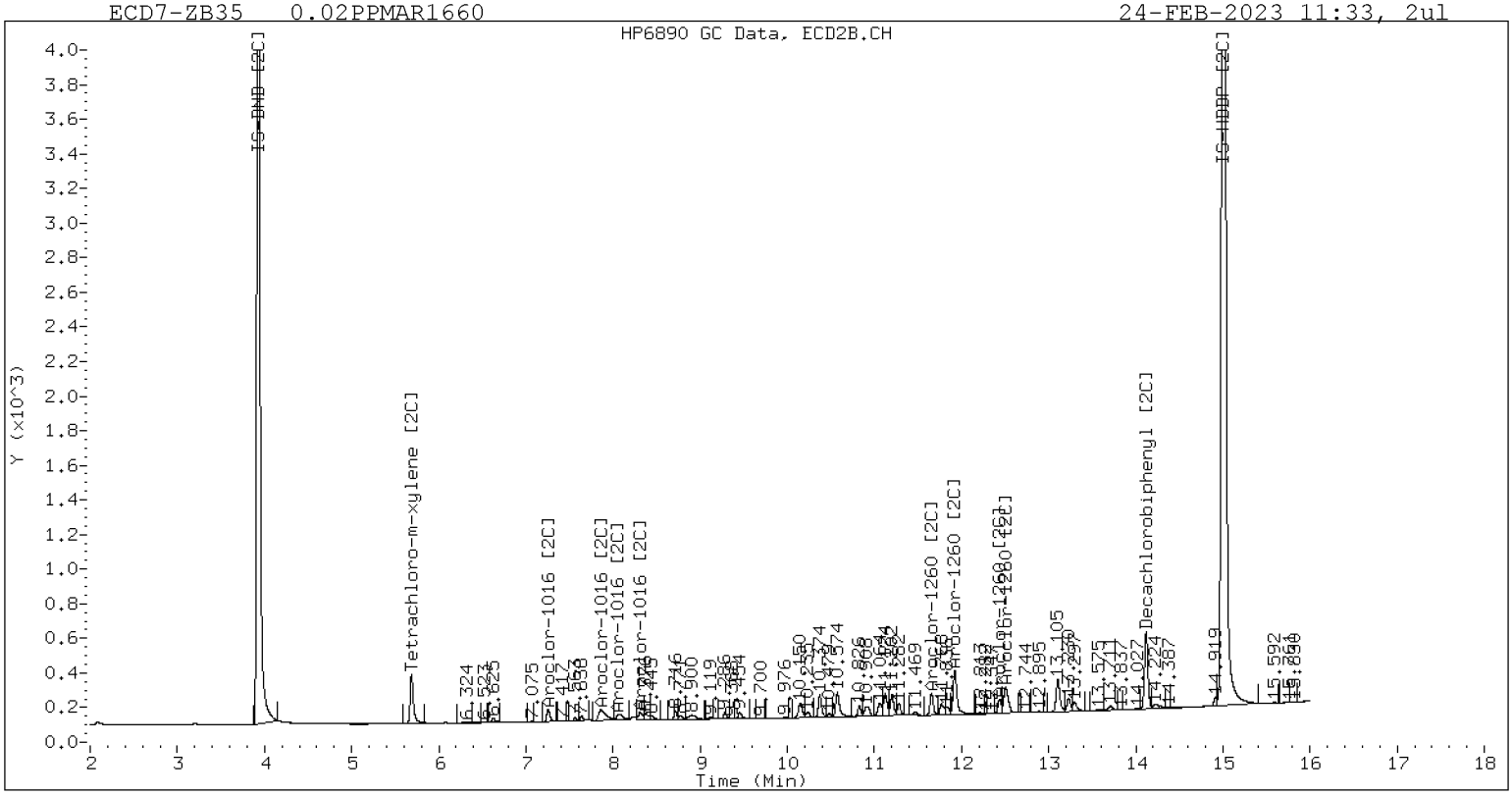
PCB Dual Column Chromatograms

ECD7-ZB5 0.02PPMAR1660 24-FEB-2023 11:33, 2ul



ZB-5 Manual Integration: NO

ECD7-ZB35 0.02PPMAR1660 24-FEB-2023 11:33, 2ul

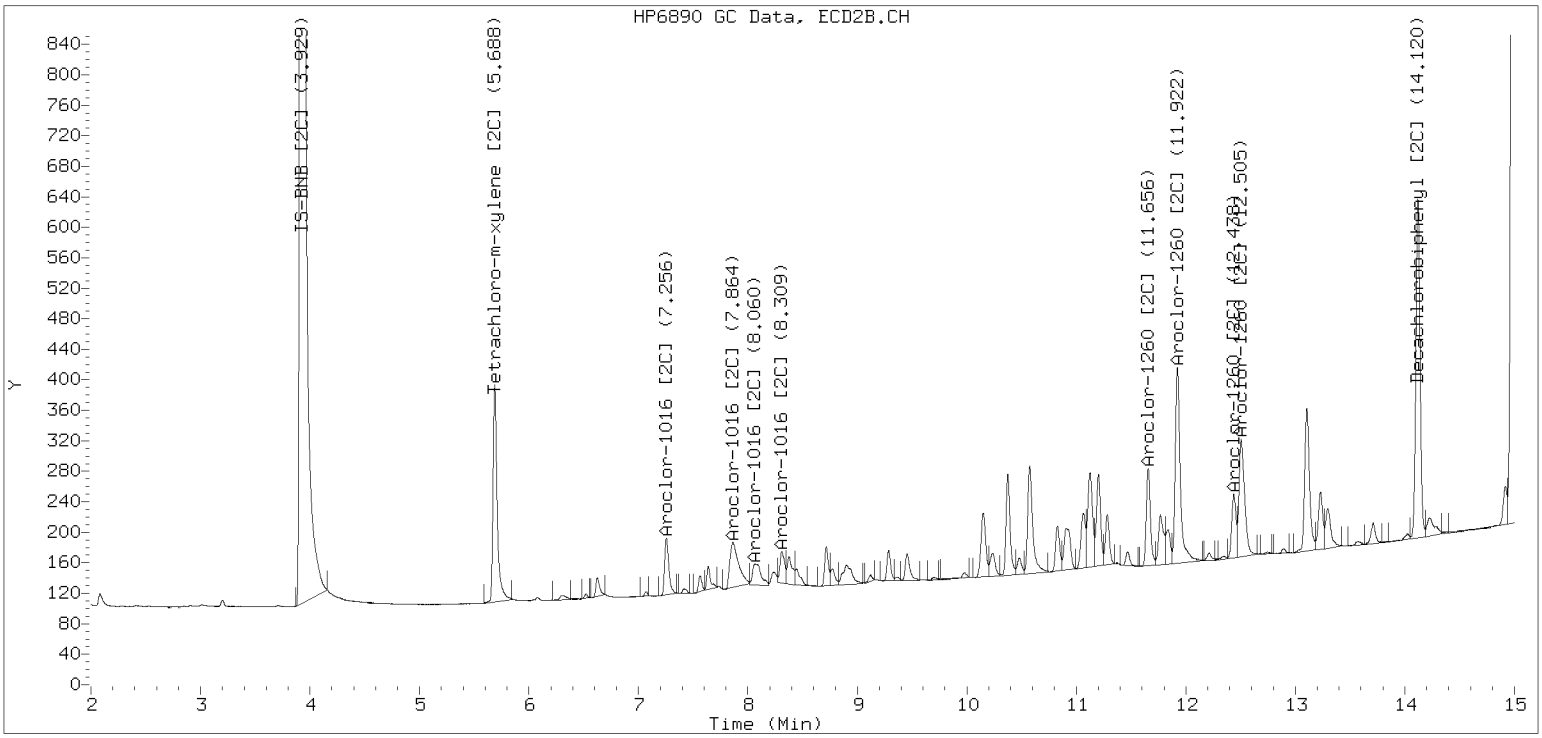


ZB-35 Manual Integration: YES

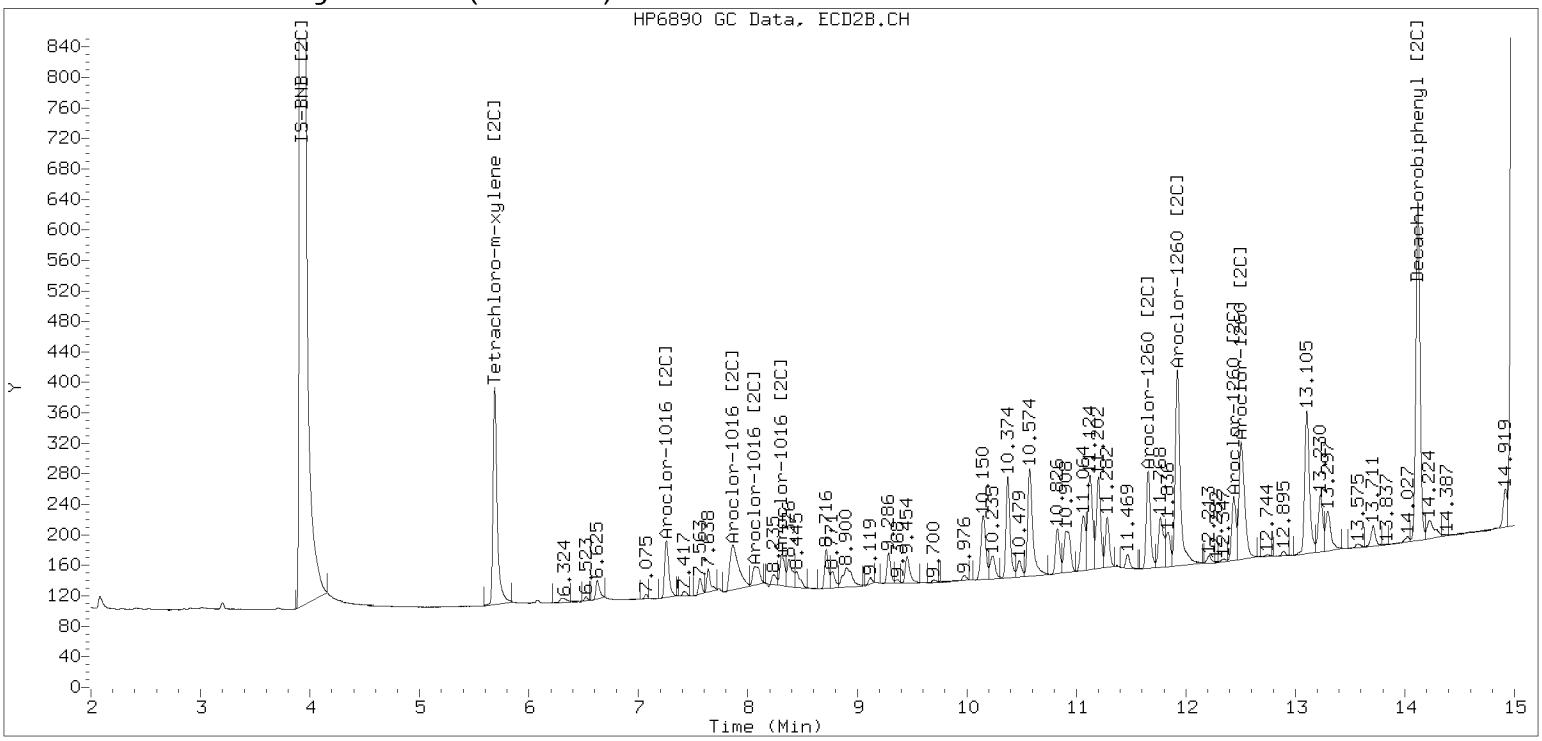
Manual Peak Adjustment, ZB-35

Datafile: ecd7.i/230224.b/230224.b/02242303ECD7.D Injection Date: 24-FEB-2023

Manual Integration (After)



Processed Integration (Before)



Analytical Resources Inc.
Dual Column 608/8082 PCB Quantitation Report

Data file 1: /230224.b/02242304ECD7.D
Data file 2: /230224.b/230224.b/02242304ECD7.D
Method: \\target\share\chem4\ecd7.i\230224.b\PCB.m
Compound Sublist: AR1660.sub
Instrument, Inj. Vol.: ecd7.i, 2ul
Quant Method: Internal Std

ARI ID: 0.05PPMAR1660
Client ID:
Injection Date: 24-FEB-2023 11:54
Report Date: 02/28/2023 09:50
Matrix: NONE
Dilution Factor: 1.0

SURROGATES

ZB5 Col RT	ZB5 Col Shift	ZB5 Col Response	ZB35 Col RT	ZB35 Col Shift	ZB35 Col Response	ZB5 on col	ZB35 on col	RPD	Compound/Flag
5.809	0.003	78493	5.688	0.003	36772	8.3	8.1	2.2	Tetrachloro-m-xylene
13.893	-0.000	113544	14.119	-0.000	62745	8.2	7.9	3.4	Decachlorobiphenyl

* Indicates RPD > 40%

INTERNAL STANDARD SUMMARY

Column 1

Standard Cpnd	Standard Area*	Sample Area	%D
Bromo-Nitrobenzene	673778	630965	-6.4
Hexabromobiphenyl	1429847	1409464	-1.4

Column 2

Standard Cpnd	Standard Area*	Sample Area	%D
Bromo-Nitrobenzene	315256	307599	-2.4
Hexabromobiphenyl	513946	521112	1.4

* Standard Areas taken from Initial Cal Level 3
Initial Calibration Date: 24-FEB-2023
<- Indicates standard response outside Limits (-50 to +100%)

	ZB5 Col				ZB35 Col				
Aroclor	Peak#	RT	Shift	Area	Amount	Peak#	RT	Shift	Area	Amount
Aroclor-1016	1	7.272	0.002	12829	53.5	1	7.256	0.000	9654	53.6
Aroclor-1016	2	7.660	0.006	36461	49.9	2	7.864	0.008	18085	49.5
Aroclor-1016	3	7.795	0.005	19865	55.7	3	8.063	0.008	9071	55.0
Aroclor-1016	4	8.408	0.003	11411	49.5	4	8.310	0.003	7309	56.5
Total Col1Ave (4 peaks):				52.2		Total Col2Ave (4 peaks):			53.7	RPD = 3
Corrected Ave (3 peaks):				51.0		Corrected Ave (3 peaks):			52.7	RPD = 3
CalAmt %D:				4.3		CalAmt %D:			7.3	
Aroclor-1260	1	11.046	0.002	25727	50.7	1	11.655	0.002	15996	52.2
Aroclor-1260	2	11.363	0.002	26482	50.0	2	11.922	0.004	40487	51.8
Aroclor-1260	3	11.739	0.005	70871	50.4	3	12.437	0.002	10248	49.4
Aroclor-1260	4	12.143	0.004	34239	48.4	4	12.506	0.004	26828	50.9
Aroclor-1260	5	12.246	0.002	15109	49.6	NS	---			----
Total Col1Ave (5 peaks):				49.8		Total Col2Ave (4 peaks):			51.1	RPD = 2
Corrected Ave (4 peaks):				49.6		Corrected Ave (3 peaks):			50.7	RPD = 2
CalAmt %D:				-0.3		CalAmt %D:			2.1	

Total PCB Area Col1 (5.906 - 13.793) = 758292 Col1 Total PCB = 0.1 ppm*

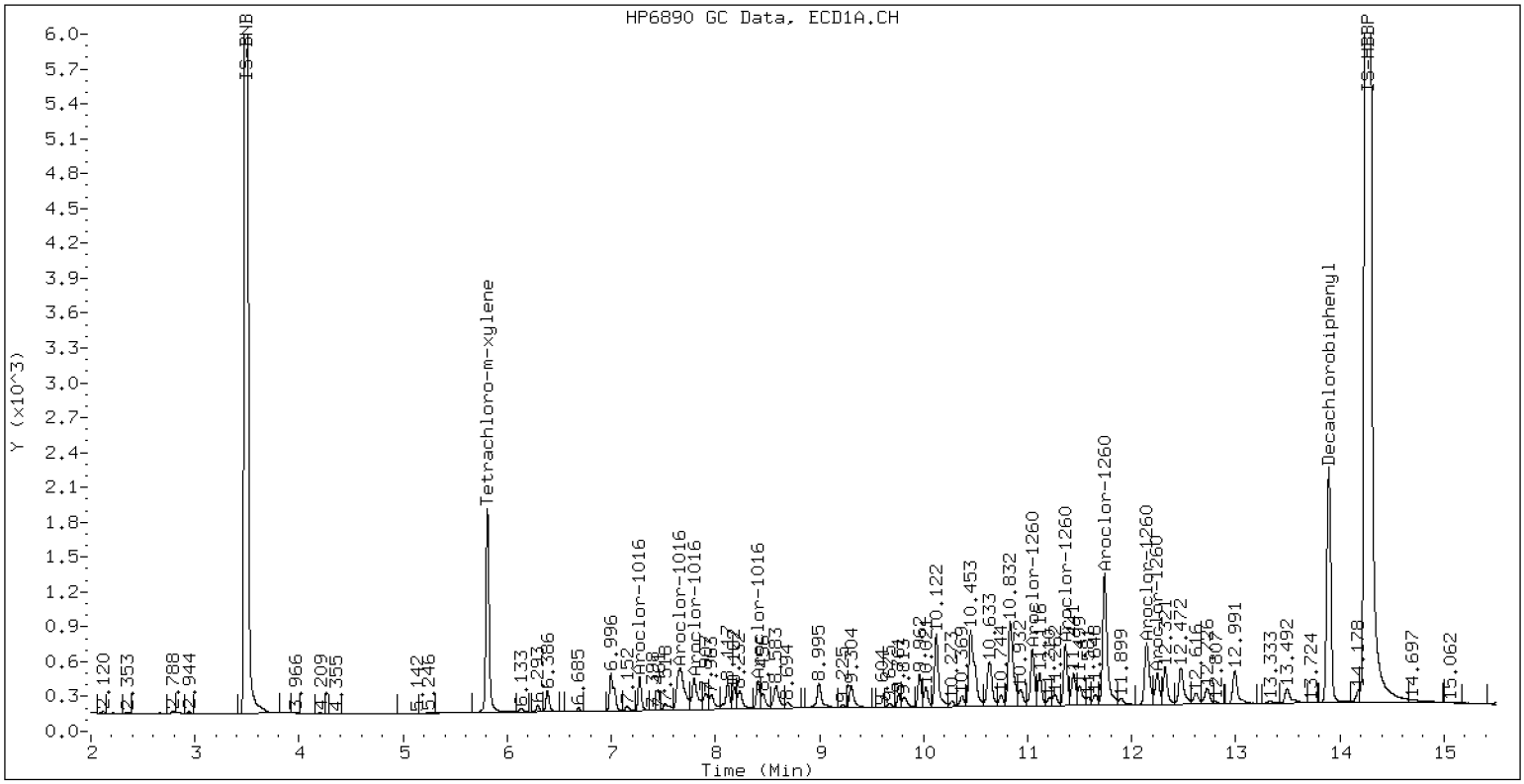
Total PCB Area Col2 (5.785 - 14.019) = 386383 Col2 Total PCB = 0.1 ppm*

* Quantitated against AR1660 0.25ppm in Ical

PCB-Form 10 Mod.

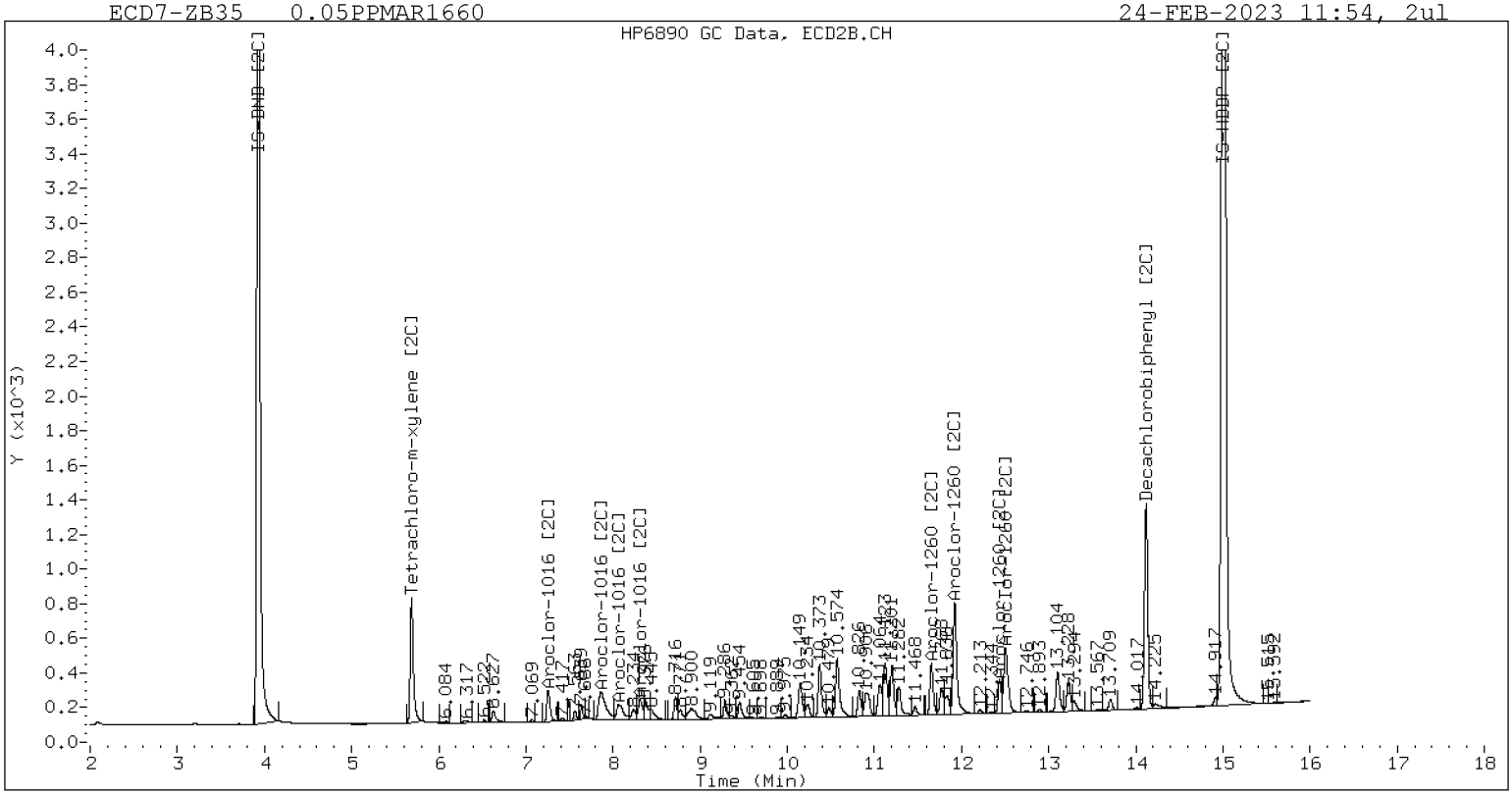
PCB Dual Column Chromatograms

ECD7-ZB5 0.05PPMAR1660 24-FEB-2023 11:54, 2ul



ZB-5 Manual Integration: NO

ECD7-ZB35 0.05PPMAR1660 24-FEB-2023 11:54, 2ul



ZB-35 Manual Integration: NO

Analytical Resources Inc.
Dual Column 608/8082 PCB Quantitation Report

Data file 1: /230224.b/02242305ECD7.D
Data file 2: /230224.b/230224.b/02242305ECD7.D
Method: \\target\share\chem4\ecd7.i\230224.b\PCB.m
Compound Sublist: AR1660.sub
Instrument, Inj. Vol.: ecd7.i, 2ul
Quant Method: Internal Std

ARI ID: 1.0PPMAR1660
Client ID:
Injection Date: 24-FEB-2023 12:15
Report Date: 02/28/2023 09:50
Matrix: NONE
Dilution Factor: 1.0

SURROGATES

ZB5 Col RT	ZB5 Col Shift	ZB5 Col Response	ZB35 Col RT	ZB35 Col Shift	ZB35 Col Response	ZB5 on col	ZB35 on col	RPD	Compound/Flag
5.813	0.006	1641874	5.688	0.003	709674	166.2	151.5	9.3	Tetrachloro-m-xylene
13.899	0.006	2344583	14.122	0.002	1300114	161.9	158.6	2.1	Decachlorobiphenyl

* Indicates RPD > 40%

INTERNAL STANDARD SUMMARY

Column 1

Standard Cpnd	Standard Area*	Sample Area	%D
Bromo-Nitrobenzene	673778	661440	-1.8
Hexabromobiphenyl	1429847	1470100	2.8

Column 2

Standard Cpnd	Standard Area*	Sample Area	%D
Bromo-Nitrobenzene	315256	319272	1.3
Hexabromobiphenyl	513946	538138	4.7

* Standard Areas taken from Initial Cal Level 3
Initial Calibration Date: 24-FEB-2023
<- Indicates standard response outside Limits (-50 to +100%)

	ZB5 Col					ZB35 Col				
Aroclor	Peak#	RT	Shift	Area	Amount	Peak#	RT	Shift	Area	Amount
Aroclor-1016	1	7.270	-0.000	220519	877.8	1	7.254	-0.001	162833	871.2
Aroclor-1016	2	7.652	-0.002	731607	955.3	2	7.852	-0.004	373610	985.8
Aroclor-1016	3	7.789	-0.001	307629	822.8	3	8.051	-0.003	156666	915.2
Aroclor-1016	4	8.404	-0.001	229387	949.1	4	8.305	-0.002	117186	872.6

Total Col1Ave (4 peaks): 901.3 Total Col2Ave (4 peaks): 911.2 RPD = 1
Corrected Ave (3 peaks): 883.3 Corrected Ave (3 peaks): 886.3 RPD = 0

CalAmt %D: -9.9 CalAmt %D: -8.9

Aroclor-1260	1	11.044	-0.000	504641	954.2	1	11.652	-0.000	282606	893.1
Aroclor-1260	2	11.360	-0.001	524931	950.0	2	11.917	-0.000	709329	878.4
Aroclor-1260	3	11.734	-0.000	1410270	962.3	3	12.434	-0.001	215124	1003.8
Aroclor-1260	4	12.137	-0.002	720770	976.7	4	12.501	-0.001	506566	930.6
Aroclor-1260	5	12.243	-0.001	304211	957.7	NS	---			----

Total Col1Ave (5 peaks): 960.2 Total Col2Ave (4 peaks): 926.5 RPD = 4
Corrected Ave (4 peaks): 956.0 Corrected Ave (3 peaks): 900.7 RPD = 6

CalAmt %D: -4.0 CalAmt %D: -7.4

Total PCB Area Col1 (5.906 - 13.793) = 14454279 Col1 Total PCB = 1.8 ppm*

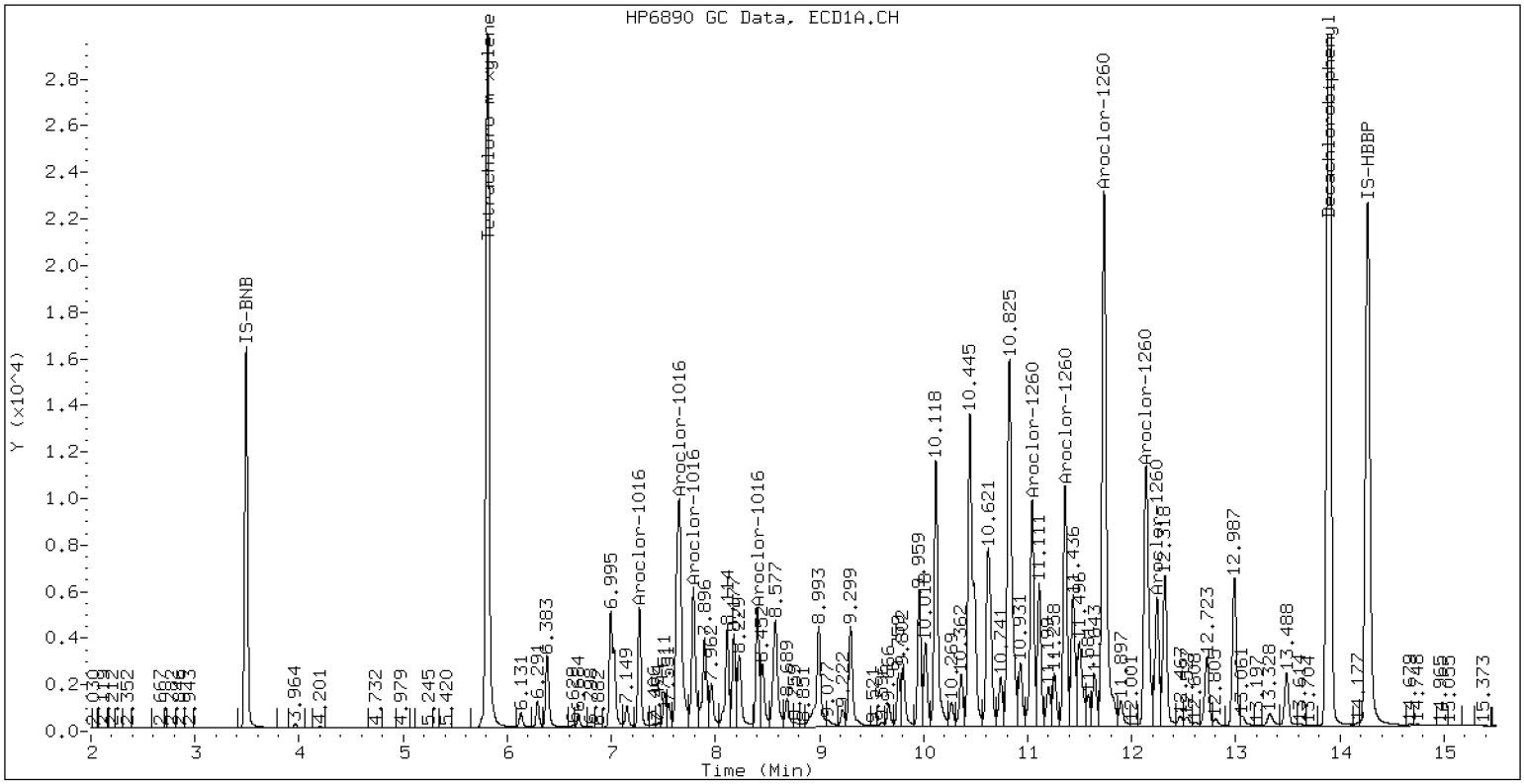
Total PCB Area Col2 (5.785 - 14.019) = 7029563 Col2 Total PCB = 1.8 ppm*

* Quantitated against AR1660 0.25ppm in Ical

PCB-Form 10 Mod.

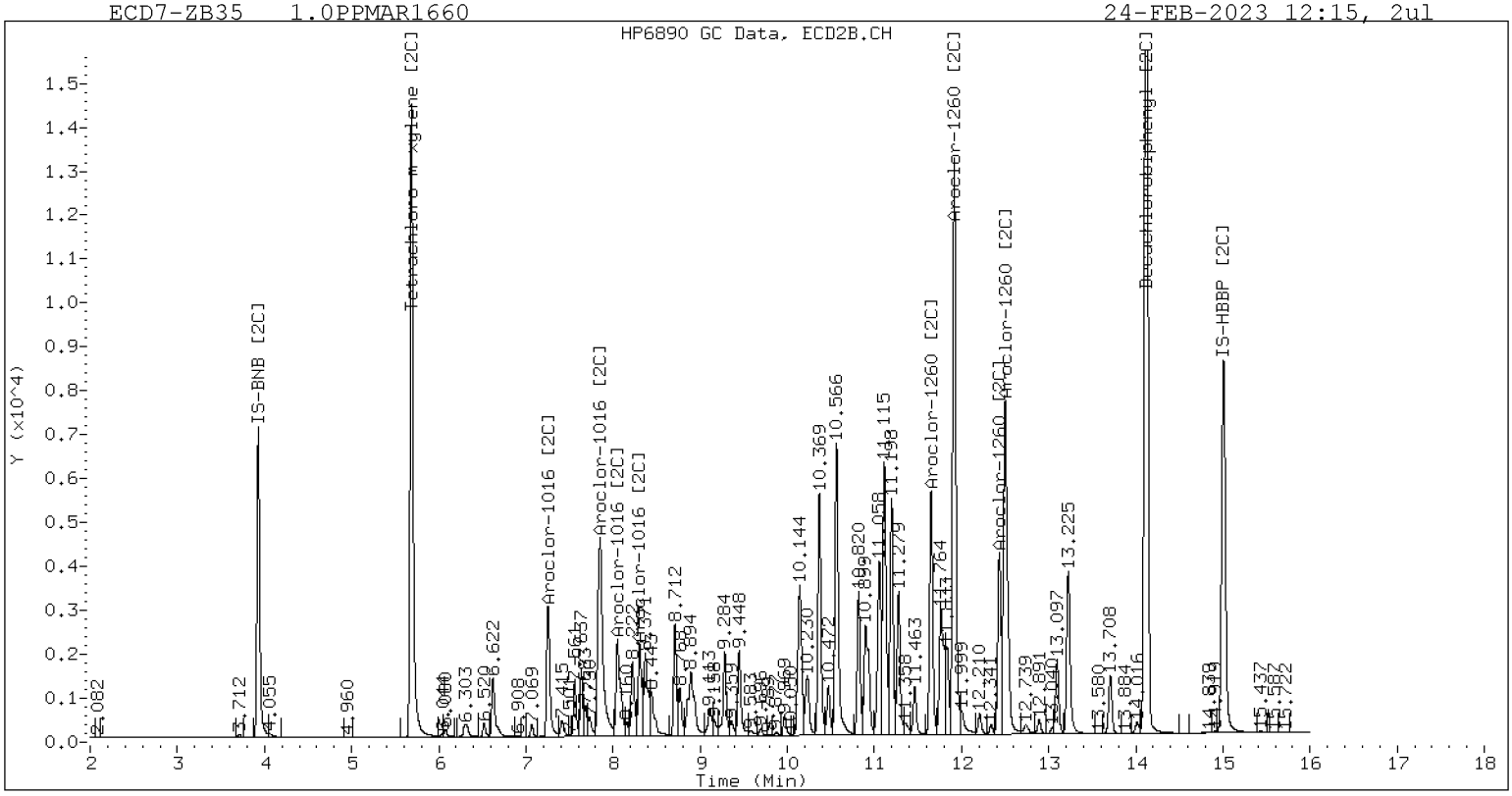
PCB Dual Column Chromatograms

ECD7-ZB5 1.0PPMAR1660 24-FEB-2023 12:15, 2ul



ZB-5 Manual Integration: NO

ECD7-ZB35 1.0PPMAR1660 24-FEB-2023 12:15, 2ul



ZB-35 Manual Integration: NO

Analytical Resources Inc.
Dual Column 608/8082 PCB Quantitation Report

Data file 1: /230224.b/02242306ECD7.D
Data file 2: /230224.b/230224.b/02242306ECD7.D
Method: \\target\share\chem4\ecd7.i\230224.b\PCB.m
Compound Sublist: AR1660.sub
Instrument, Inj. Vol.: ecd7.i, 2ul
Quant Method: Internal Std

ARI ID: 0.1PPMAR1660
Client ID:
Injection Date: 24-FEB-2023 12:36
Report Date: 02/28/2023 09:50
Matrix: NONE
Dilution Factor: 1.0

SURROGATES

ZB5 Col			ZB35 Col			ZB5	ZB35		
RT	Shift	Response	RT	Shift	Response	on col	on col	RPD	Compound/Flag
5.809	0.002	155528	5.688	0.003	74628	15.9	16.0	0.9	Tetrachloro-m-xylene
13.892	-0.001	227253	14.119	-0.000	128496	15.8	15.8	0.5	Decachlorobiphenyl

* Indicates RPD > 40%

INTERNAL STANDARD SUMMARY

Column 1

Standard Cpnd	Standard Area*	Sample Area	%D
Bromo-Nitrobenzene	673778	655979	-2.6
Hexabromobiphenyl	1429847	1464509	2.4

Column 2

Standard Cpnd	Standard Area*	Sample Area	%D
Bromo-Nitrobenzene	315256	317418	0.7
Hexabromobiphenyl	513946	532962	3.7

* Standard Areas taken from Initial Cal Level 3
Initial Calibration Date: 24-FEB-2023
<- Indicates standard response outside Limits (-50 to +100%)

	ZB5 Col				ZB35 Col				
Aroclor	Peak#	RT	Shift	Area	Amount	Peak#	RT	Shift	Area	Amount
Aroclor-1016	1	7.271	0.000	25761	103.4	1	7.255	-0.000	19315	103.9
Aroclor-1016	2	7.657	0.003	75616	99.6	2	7.863	0.007	40308	107.0
Aroclor-1016	3	7.794	0.004	39547	106.7	3	8.059	0.005	18304	107.6
Aroclor-1016	4	8.406	0.001	24260	101.2	4	8.309	0.002	14708	110.2

Total Col1Ave (4 peaks): 102.7 Total Col2Ave (4 peaks): 107.2 RPD = 4
Corrected Ave (3 peaks): 101.4 Corrected Ave (3 peaks): 106.2 RPD = 5

CalAmt %D: 2.7 CalAmt %D: 7.2

Aroclor-1260	1	11.045	0.000	52009	98.7	1	11.655	0.002	31282	99.8
Aroclor-1260	2	11.362	0.001	55116	100.1	2	11.920	0.003	80574	100.7
Aroclor-1260	3	11.738	0.004	145604	99.7	3	12.437	0.002	19566	92.2
Aroclor-1260	4	12.141	0.002	72408	98.5	4	12.503	0.001	53588	99.4
Aroclor-1260	5	12.245	0.001	30745	97.2	NS	---			----

Total Col1Ave (5 peaks): 98.8 Total Col2Ave (4 peaks): 98.0 RPD = 1
Corrected Ave (4 peaks): 98.5 Corrected Ave (3 peaks): 97.1 RPD = 1

CalAmt %D: -1.2 CalAmt %D: -2.0

Total PCB Area Col1 (5.906 - 13.793) = 1555762 Col1 Total PCB = 0.2 ppm*

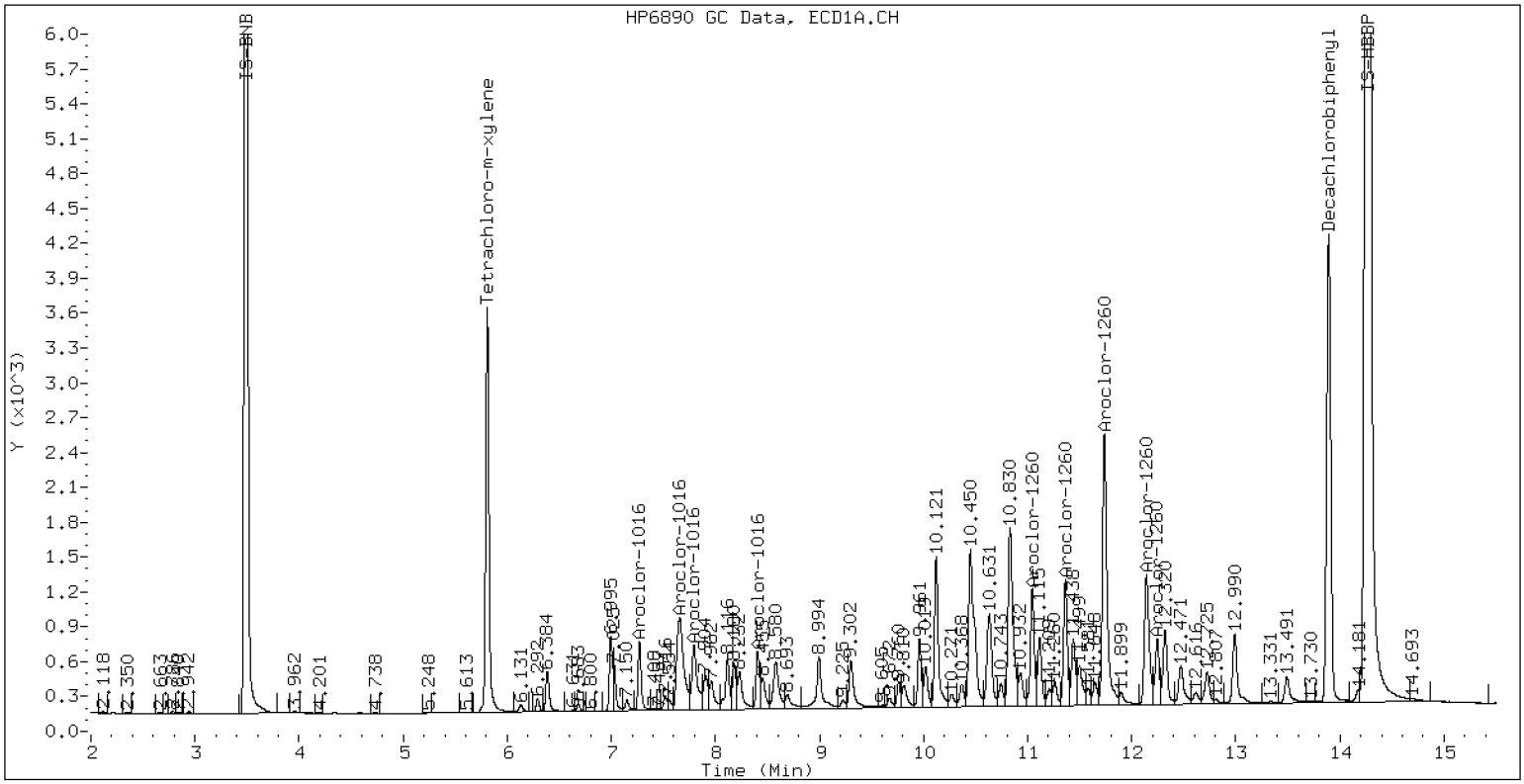
Total PCB Area Col2 (5.785 - 14.019) = 764924 Col2 Total PCB = 0.2 ppm*

* Quantitated against AR1660 0.25ppm in Ical

PCB-Form 10 Mod.

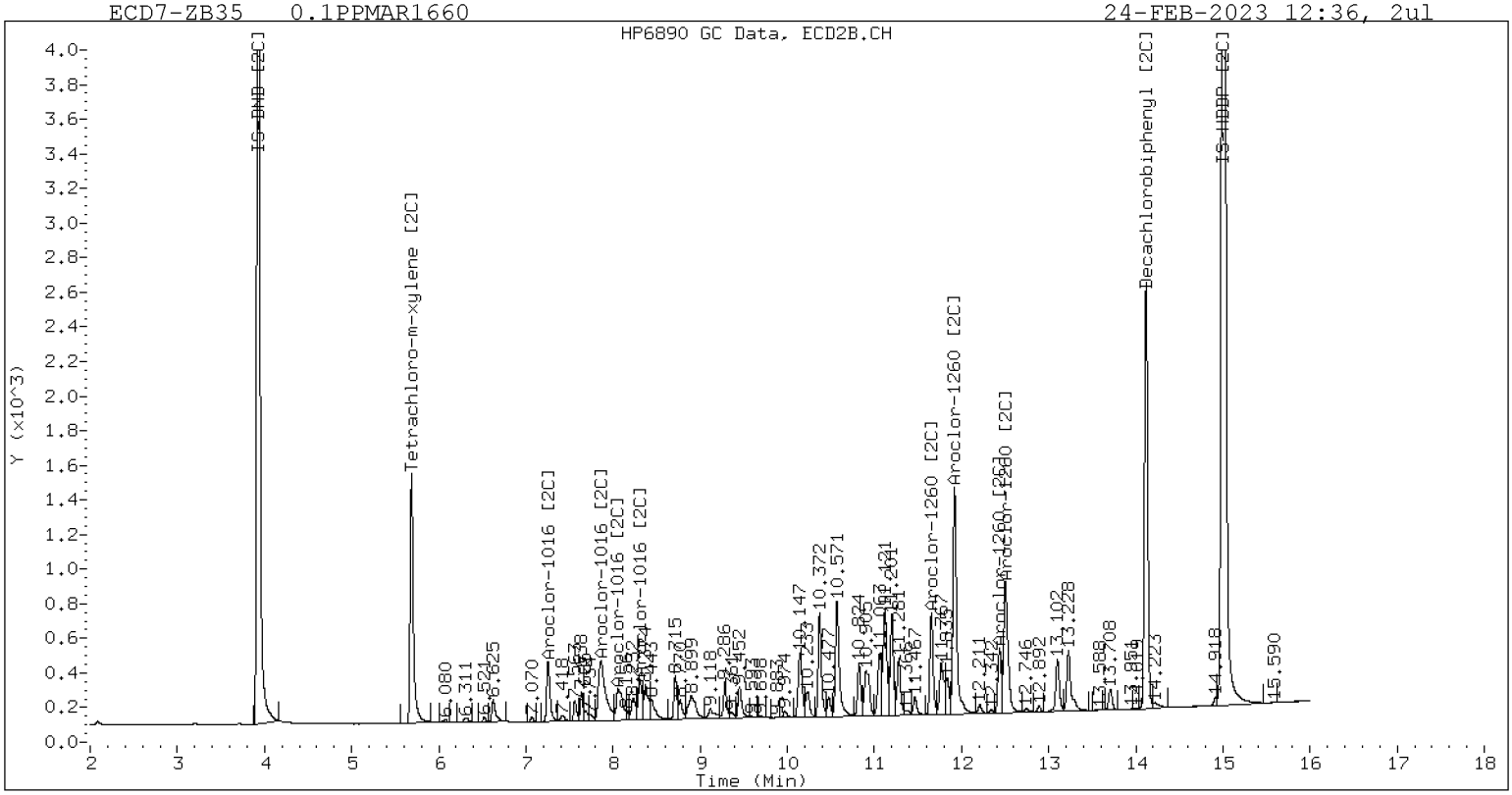
PCB Dual Column Chromatograms

ECD7-ZB5 0.1PPMAR1660 24-FEB-2023 12:36, 2ul



ZB-5 Manual Integration: NO

ECD7-ZB35 0.1PPMAR1660 24-FEB-2023 12:36, 2ul



ZB-35 Manual Integration: NO

Analytical Resources Inc.
Dual Column 608/8082 PCB Quantitation Report

Data file 1: /230224.b/02242307ECD7.D
Data file 2: /230224.b/230224.b/02242307ECD7.D
Method: \\target\share\chem4\ecd7.i\230224.b\PCB.m
Compound Sublist: AR1660.sub
Instrument, Inj. Vol.: ecd7.i, 2ul
Quant Method: Internal Std

ARI ID: 0.5PPMAR1660
Client ID:
Injection Date: 24-FEB-2023 12:57
Report Date: 02/28/2023 09:50
Matrix: NONE
Dilution Factor: 1.0

SURROGATES

ZB5 Col RT	ZB5 Col Shift	ZB5 Col Response	ZB35 Col RT	ZB35 Col Shift	ZB35 Col Response	ZB5 on col	ZB35 on col	RPD	Compound/Flag
5.810	0.004	724614	5.688	0.003	359257	75.2	76.7	2.0	Tetrachloro-m-xylene
13.898	0.005	1056911	14.120	0.000	650153	74.3	79.5	6.9	Decachlorobiphenyl

* Indicates RPD > 40%

INTERNAL STANDARD SUMMARY

Column 1

Standard Cpnd	Standard Area*	Sample Area	%D
Bromo-Nitrobenzene	673778	645275	-4.2
Hexabromobiphenyl	1429847	1445345	1.1

Column 2

Standard Cpnd	Standard Area*	Sample Area	%D
Bromo-Nitrobenzene	315256	319170	1.2
Hexabromobiphenyl	513946	536853	4.5

* Standard Areas taken from Initial Cal Level 3
Initial Calibration Date: 24-FEB-2023
<- Indicates standard response outside Limits (-50 to +100%)

	ZB5 Col				ZB35 Col				
Aroclor	Peak#	RT	Shift	Area	Amount	Peak#	RT	Shift	Area	Amount
Aroclor-1016	1	7.270	0.000	115193	470.0	1	7.256	0.000	86287	461.8
Aroclor-1016	2	7.654	0.000	369991	495.2	2	7.856	0.000	192524	508.1
Aroclor-1016	3	7.790	0.000	160952	441.3	3	8.055	0.000	81039	473.6
Aroclor-1016	4	8.405	0.000	115032	487.9	4	8.307	0.000	62136	462.8

Total Col1Ave (4 peaks): 473.6 Total Col2Ave (4 peaks): 476.6 RPD = 1
Corrected Ave (3 peaks): 466.4 Corrected Ave (3 peaks): 466.1 RPD = 0

CalAmt %D: -5.3 CalAmt %D: -4.7

Aroclor-1260	1	11.044	0.000	247212	475.5	1	11.653	0.000	145247	460.1
Aroclor-1260	2	11.361	0.000	262877	483.9	2	11.918	0.000	379838	471.5
Aroclor-1260	3	11.734	0.000	678830	471.1	3	12.436	0.000	104092	486.9
Aroclor-1260	4	12.139	0.000	356067	490.7	4	12.502	0.000	258953	476.9
Aroclor-1260	5	12.244	0.000	150280	481.2	NS	---			----

Total Col1Ave (5 peaks): 480.5 Total Col2Ave (4 peaks): 473.8 RPD = 1
Corrected Ave (4 peaks): 477.9 Corrected Ave (3 peaks): 469.5 RPD = 2

CalAmt %D: -3.9 CalAmt %D: -5.2

Total PCB Area Col1 (5.906 - 13.793) = 7134169 Col1 Total PCB = 0.9 ppm*

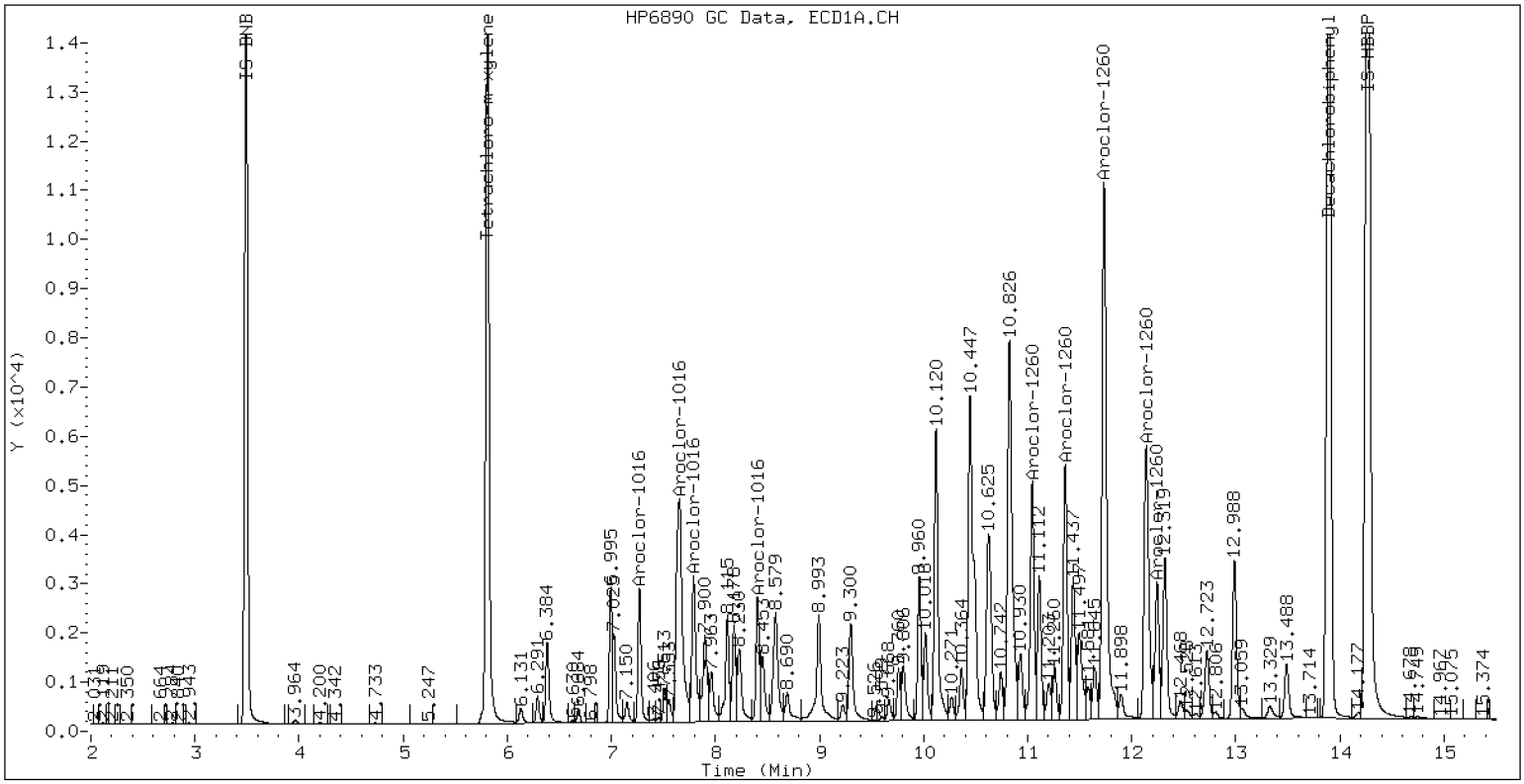
Total PCB Area Col2 (5.785 - 14.019) = 3589735 Col2 Total PCB = 0.9 ppm*

* Quantitated against AR1660 0.25ppm in Ical

PCB-Form 10 Mod.

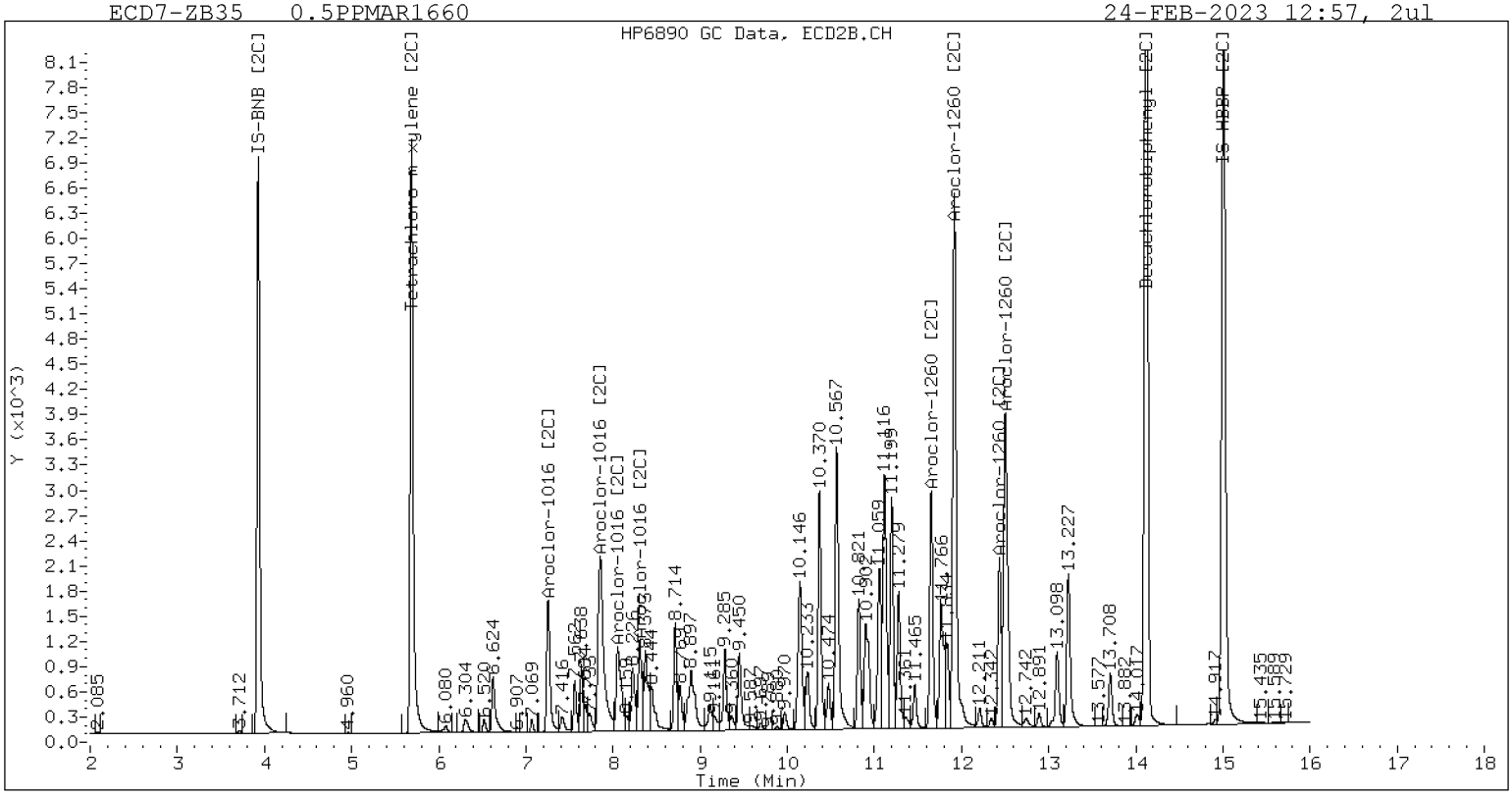
PCB Dual Column Chromatograms

ECD7-ZB5 0.5PPMAR1660 24-FEB-2023 12:57, 2ul



ZB-5 Manual Integration: NO

ECD7-ZB35 0.5PPMAR1660 24-FEB-2023 12:57, 2ul



ZB-35 Manual Integration: NO

Analytical Resources Inc.
Dual Column 608/8082 PCB Quantitation Report

Data file 1: /230224.b/02242308ECD7.D
Data file 2: /230224.b/230224.b/02242308ECD7.D
Method: \\target\share\chem4\ecd7.i\230224.b\PCB.m
Compound Sublist: AR1242.sub
Instrument, Inj. Vol.: ecd7.i, 2ul
Quant Method: Internal Std

ARI ID: 0.25PPMAR1242
Client ID:
Injection Date: 24-FEB-2023 13:18
Report Date: 02/28/2023 09:50
Matrix: NONE
Dilution Factor: 1.0

SURROGATES

ZB5 Col RT	ZB5 Col Shift	ZB5 Col Response	ZB35 Col RT	ZB35 Col Shift	ZB35 Col Response	ZB5 on col	ZB35 on col	RPD	Compound/Flag
5.809	0.003	434187	5.688	0.003	214306	46.0	46.5	1.1	Tetrachloro-m-xylene
13.894	0.000	515867	14.119	-0.001	312943	35.6	38.5	7.6	Decachlorobiphenyl

* Indicates RPD > 40%

INTERNAL STANDARD SUMMARY

Column 1

Standard Cpnd	Standard Area*	Sample Area	%D
Bromo-Nitrobenzene	673778	632576	-6.1
Hexabromobiphenyl	1429847	1469715	2.8

Column 2

Standard Cpnd	Standard Area*	Sample Area	%D
Bromo-Nitrobenzene	315256	314129	-0.4
Hexabromobiphenyl	513946	534294	4.0

* Standard Areas taken from Initial Cal Level 3
Initial Calibration Date: 24-FEB-2023
<- Indicates standard response outside Limits (-50 to +100%)

	ZB5 Col					ZB35 Col				
Aroclor	Peak#	RT	Shift	Area	Amount	Peak#	RT	Shift	Area	Amount
Aroclor-1242	1	7.271	0.000	49009	250.0	1	7.255	0.000	36487	250.0
Aroclor-1242	2	7.656	0.000	148833	250.0	2	7.858	0.000	76699	250.0
Aroclor-1242	3	8.405	0.000	46308	250.0	3	9.167	0.000	23866	250.0
Aroclor-1242	4	8.579	0.000	68453	250.0	4	9.597	0.000	29080	250.0

Total Col1Ave (4 peaks): 250.0 Total Col2Ave (4 peaks): 250.0 RPD = 0

Corrected Ave (3 peaks): 250.0 Corrected Ave (3 peaks): 250.0 RPD = 0

Total PCB Area Col1 (5.906 - 13.793) = 1221467 Col1 Total PCB = 0.2 ppm*

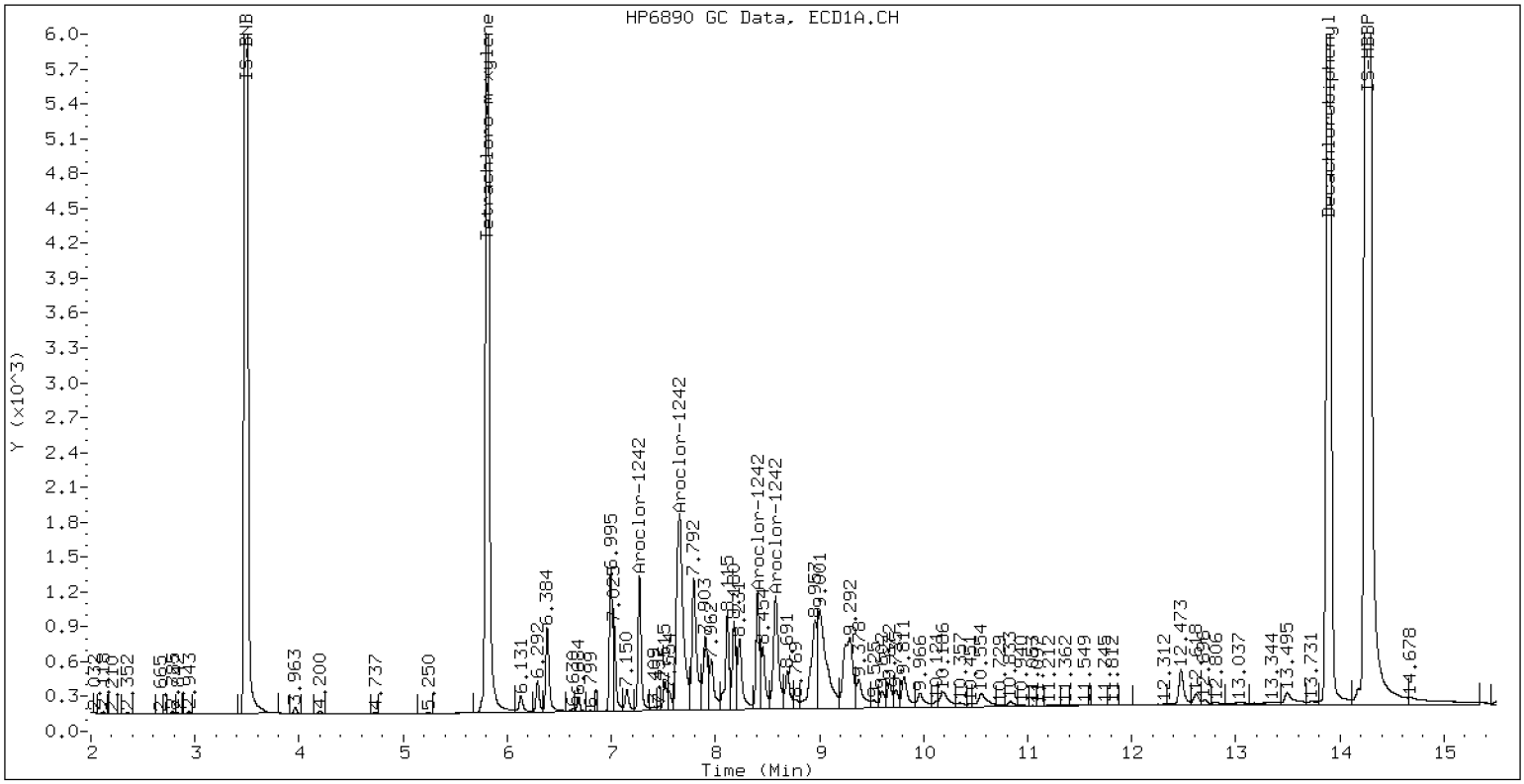
Total PCB Area Col2 (5.785 - 14.019) = 572067 Col2 Total PCB = 0.2 ppm*

* Quantitated against AR1660 0.25ppm in Ical

PCB-Form 10 Mod.

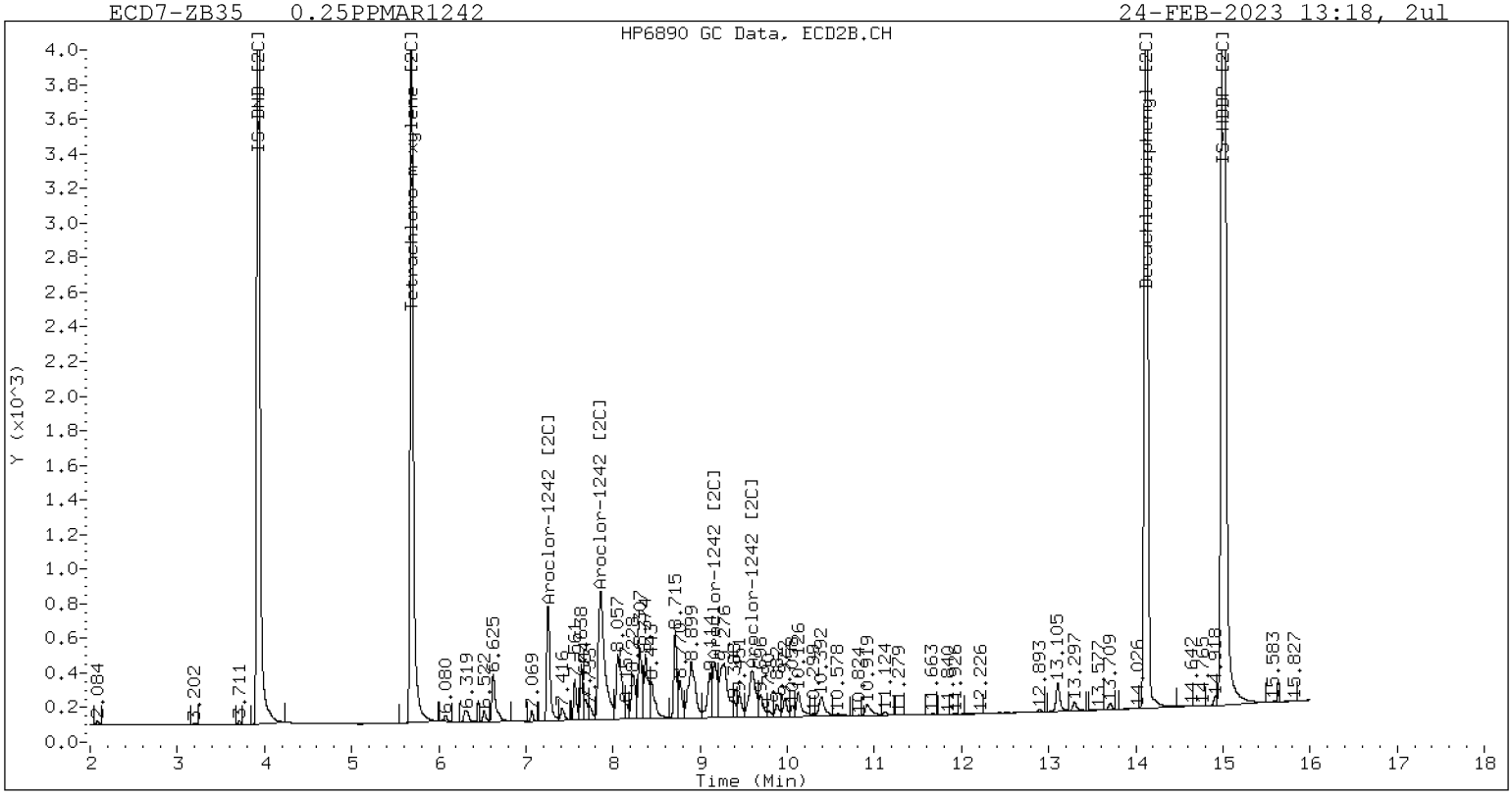
PCB Dual Column Chromatograms

ECD7-ZB5 0.25PPMAR1242 24-FEB-2023 13:18, 2ul



ZB-5 Manual Integration: NO

ECD7-ZB35 0.25PPMAR1242 24-FEB-2023 13:18, 2ul



ZB-35 Manual Integration: NO

Analytical Resources Inc.
Dual Column 608/8082 PCB Quantitation Report

Data file 1: /230224.b/02242309ECD7.D
Data file 2: /230224.b/230224.b/02242309ECD7.D
Method: \\target\share\chem4\ecd7.i\230224.b\PCB.m
Compound Sublist: AR1248.sub
Instrument, Inj. Vol.: ecd7.i, 2ul
Quant Method: Internal Std

ARI ID: 0.25PPMAR1248
Client ID:
Injection Date: 24-FEB-2023 13:39
Report Date: 02/28/2023 09:51
Matrix: NONE
Dilution Factor: 1.0

SURROGATES

ZB5 Col RT	ZB5 Col Shift	ZB5 Col Response	ZB35 Col RT	ZB35 Col Shift	ZB35 Col Response	ZB5 on col	ZB35 on col	RPD	Compound/Flag
5.809	0.003	349513	5.688	0.003	176615	36.6	37.9	3.4	Tetrachloro-m-xylene
13.894	0.001	523008	14.121	0.001	322054	36.4	39.3	7.5	Decachlorobiphenyl

* Indicates RPD > 40%

INTERNAL STANDARD SUMMARY

Column 1

Standard Cpnd	Standard Area*	Sample Area	%D
Bromo-Nitrobenzene	673778	639911	-5.0
Hexabromobiphenyl	1429847	1458696	2.0

Column 2

Standard Cpnd	Standard Area*	Sample Area	%D
Bromo-Nitrobenzene	315256	317938	0.9
Hexabromobiphenyl	513946	538760	4.8

* Standard Areas taken from Initial Cal Level 3
Initial Calibration Date: 24-FEB-2023
<- Indicates standard response outside Limits (-50 to +100%)

	ZB5 Col					ZB35 Col				
Aroclor	Peak#	RT	Shift	Area	Amount	Peak#	RT	Shift	Area	Amount
Aroclor-1248	1	8.405	0.000	78055	250.0	1	8.308	0.000	37951	250.0
Aroclor-1248	2	8.580	0.000	99216	250.0	2	8.714	0.000	39239	250.0
Aroclor-1248	3	8.999	0.000	187178	250.0	3	9.166	0.000	45157	250.0
Aroclor-1248	4	9.295	0.000	95291	250.0	4	9.590	0.000	54216	250.0

Total Col1Ave (4 peaks): 250.0 Total Col2Ave (4 peaks): 250.0 RPD = 0

Corrected Ave (3 peaks): 250.0 Corrected Ave (3 peaks): 250.0 RPD = 0

Total PCB Area Col1 (5.906 - 13.793) = 1565180 Col1 Total PCB = 0.2 ppm*

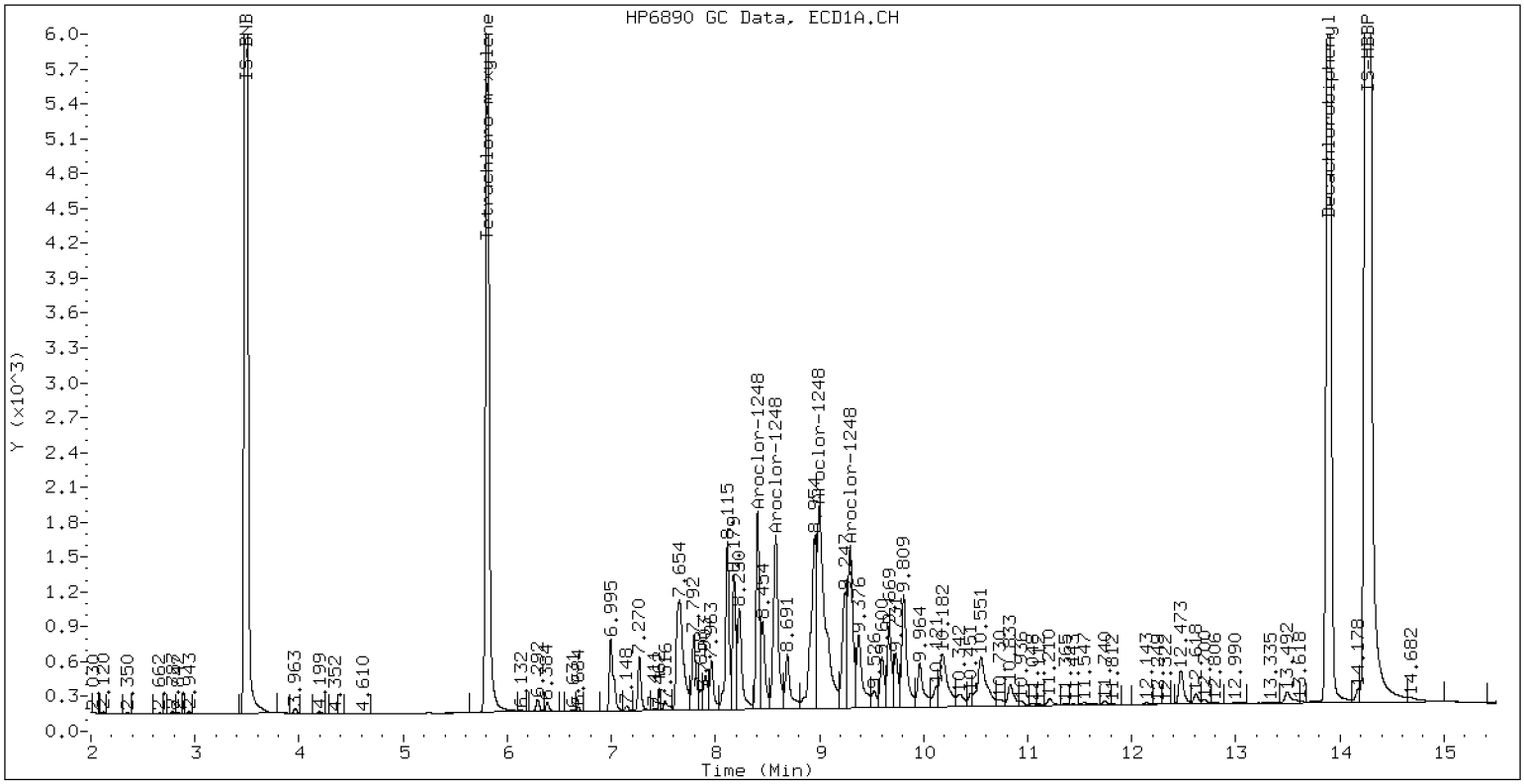
Total PCB Area Col2 (5.785 - 14.019) = 754991 Col2 Total PCB = 0.2 ppm*

* Quantitated against AR1660 0.25ppm in Ical

PCB-Form 10 Mod.

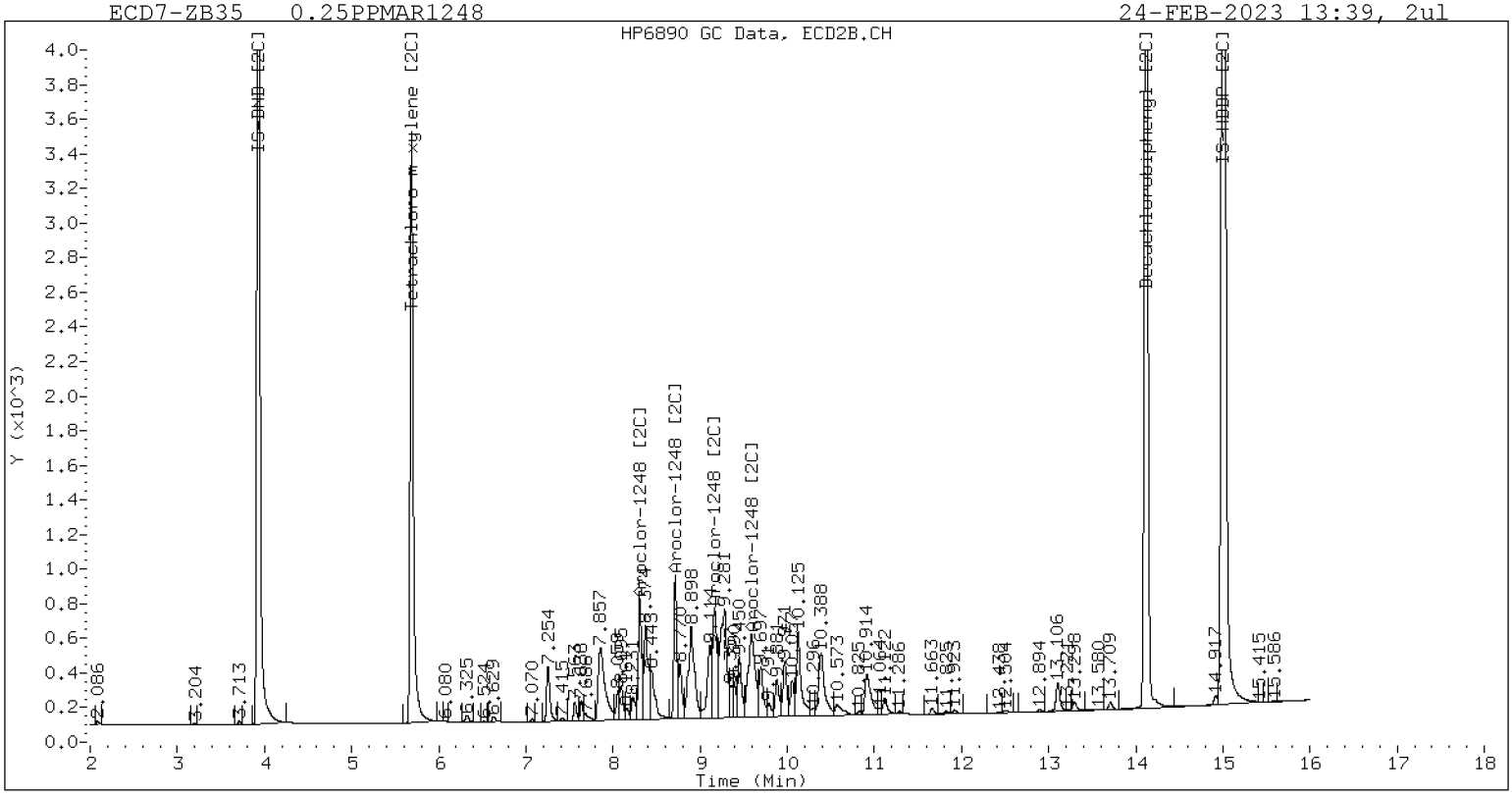
PCB Dual Column Chromatograms

ECD7-ZB5 0.25PPMAR1248 24-FEB-2023 13:39, 2ul



ZB-5 Manual Integration: NO

ECD7-ZB35 0.25PPMAR1248 24-FEB-2023 13:39, 2ul



ZB-35 Manual Integration: NO

Analytical Resources Inc.
Dual Column 608/8082 PCB Quantitation Report

Data file 1: /230224.b/02242310ECD7.D
Data file 2: /230224.b/230224.b/02242310ECD7.D
Method: \\target\share\chem4\ecd7.i\230224.b\PCB.m
Compound Sublist: AR1254.sub
Instrument, Inj. Vol.: ecd7.i, 2ul
Quant Method: Internal Std

ARI ID: 0.25PPMAR1254
Client ID:
Injection Date: 24-FEB-2023 14:00
Report Date: 02/28/2023 09:51
Matrix: NONE
Dilution Factor: 1.0

SURROGATES

ZB5 Col RT	ZB5 Col Shift	ZB5 Col Response	ZB35 Col RT	ZB35 Col Shift	ZB35 Col Response	ZB5 on col	ZB35 on col	RPD	Compound/Flag
5.808	0.002	352587	5.687	0.002	177502	37.3	38.6	3.4	Tetrachloro-m-xylene
13.895	0.002	532500	14.119	0.000	325903	37.0	40.2	8.2	Decachlorobiphenyl

* Indicates RPD > 40%

INTERNAL STANDARD SUMMARY

Column 1

Standard Cpnd	Standard Area*	Sample Area	%D
Bromo-Nitrobenzene	673778	633407	-6.0
Hexabromobiphenyl	1429847	1460265	2.1

Column 2

Standard Cpnd	Standard Area*	Sample Area	%D
Bromo-Nitrobenzene	315256	313673	-0.5
Hexabromobiphenyl	513946	532442	3.6

* Standard Areas taken from Initial Cal Level 3
Initial Calibration Date: 24-FEB-2023
<- Indicates standard response outside Limits (-50 to +100%)

	ZB5 Col					ZB35 Col				
Aroclor	Peak#	RT	Shift	Area	Amount	Peak#	RT	Shift	Area	Amount
Aroclor-1254	1	9.299	0.000	159011	250.0	1	9.449	0.000	59603	250.0
Aroclor-1254	2	9.377	0.000	71516	250.0	2	9.970	0.000	47949	250.0
Aroclor-1254	3	9.668	0.000	102230	250.0	3	10.124	0.000	103745	250.0
Aroclor-1254	4	9.807	0.000	198777	250.0	4	10.373	0.000	101135	250.0
Aroclor-1254	5	10.176	0.000	124586	250.0	5	10.569	0.000	61577	250.0

Total Col1Ave (5 peaks): 250.0 Total Col2Ave (5 peaks): 250.0 RPD = 0

Corrected Ave (4 peaks): 250.0 Corrected Ave (4 peaks): 250.0 RPD = 0

Total PCB Area Col1 (5.906 - 13.793) = 2179224 Col1 Total PCB = 0.3 ppm*

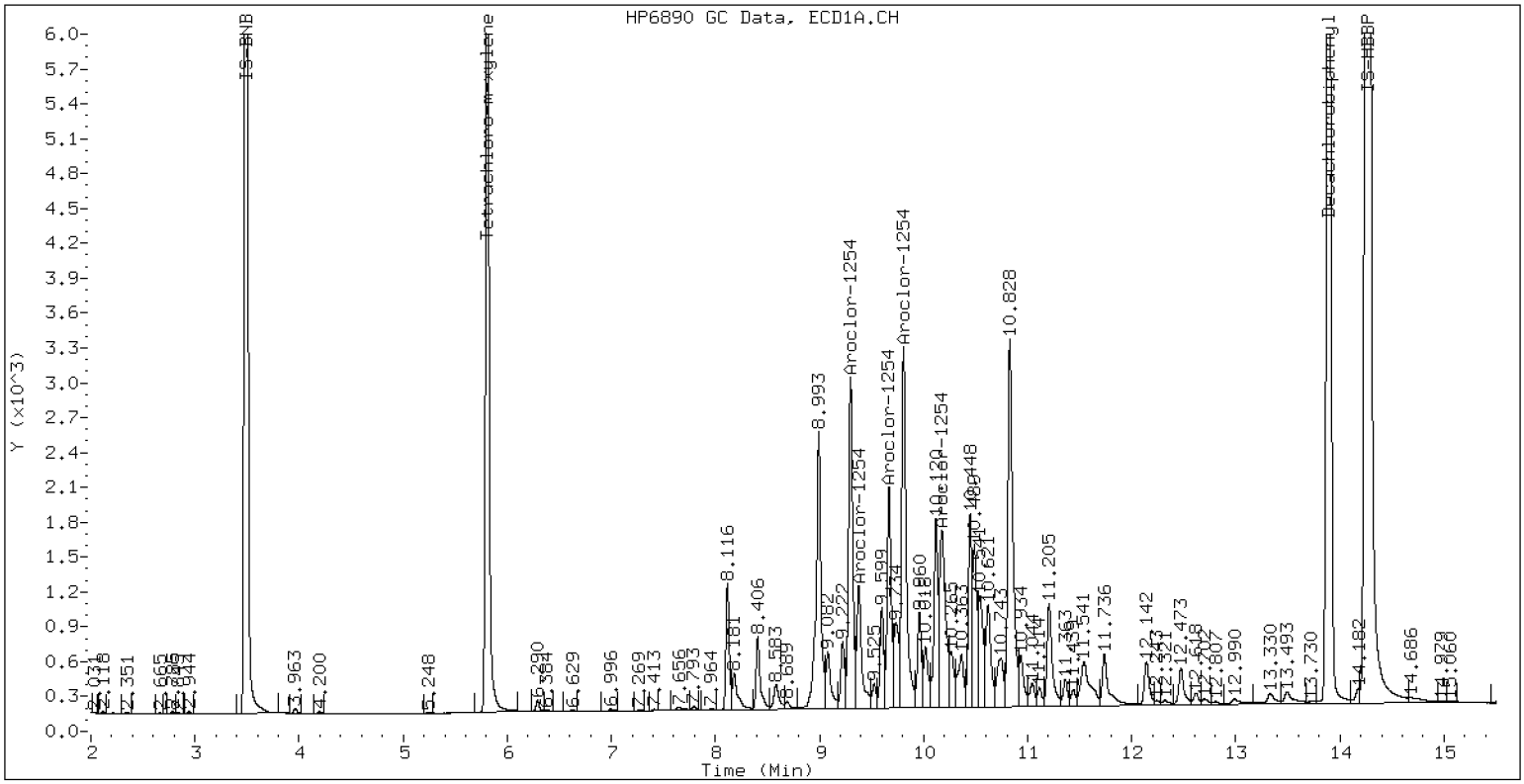
Total PCB Area Col2 (5.785 - 14.019) = 1022156 Col2 Total PCB = 0.3 ppm*

* Quantitated against AR1660 0.25ppm in Ical

PCB-Form 10 Mod.

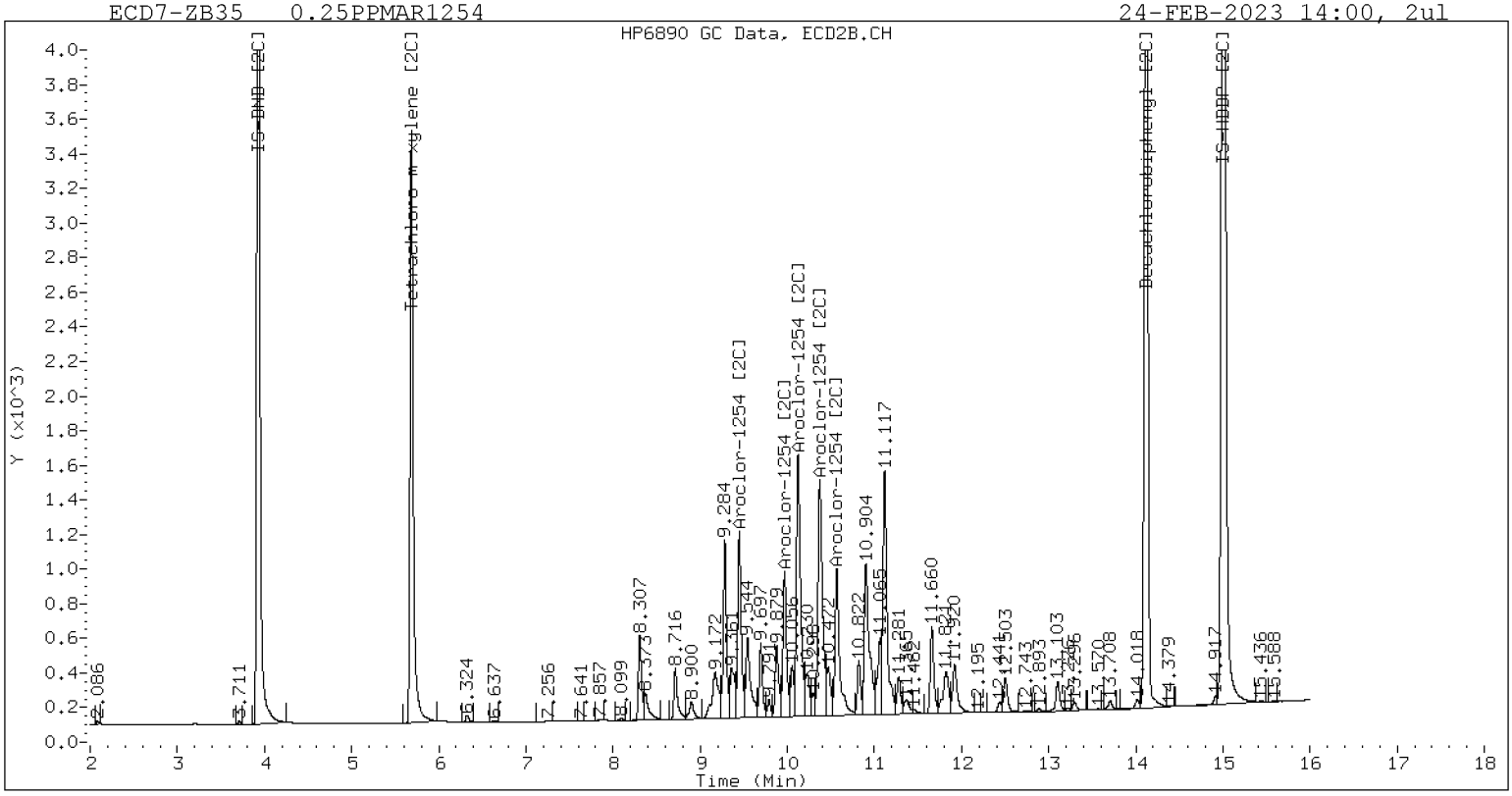
PCB Dual Column Chromatograms

ECD7-ZB5 0.25PPMAR1254 24-FEB-2023 14:00, 2ul



ZB-5 Manual Integration: NO

ECD7-ZB35 0.25PPMAR1254 24-FEB-2023 14:00, 2ul



ZB-35 Manual Integration: NO

Analytical Resources Inc.
Dual Column 608/8082 PCB Quantitation Report

Data file 1: /230224.b/02242311ECD7.D
Data file 2: /230224.b/230224.b/02242311ECD7.D
Method: \\target\share\chem4\ecd7.i\230224.b\PCB.m
Compound Sublist: AR2162.sub
Instrument, Inj. Vol.: ecd7.i, 2ul
Quant Method: Internal Std

ARI ID: 0.25PPMAR2162
Client ID:
Injection Date: 24-FEB-2023 14:21
Report Date: 02/28/2023 09:51
Matrix: NONE
Dilution Factor: 1.0

SURROGATES

ZB5 Col RT	ZB5 Col Shift	ZB5 Col Response	ZB35 Col RT	ZB35 Col Shift	ZB35 Col Response	ZB5 on col	ZB35 on col	RPD	Compound/Flag
5.807	0.001	362236	5.686	0.000	177349	38.4	39.2	2.1	Tetrachloro-m-xylene
13.894	0.001	523254	14.119	-0.000	321034	36.0	39.2	8.3	Decachlorobiphenyl

* Indicates RPD > 40%

INTERNAL STANDARD SUMMARY

Column 1

Standard Cpnd	Standard Area*	Sample Area	%D
Bromo-Nitrobenzene	673778	632433	-6.1
Hexabromobiphenyl	1429847	1474039	3.1

Column 2

Standard Cpnd	Standard Area*	Sample Area	%D
Bromo-Nitrobenzene	315256	308453	-2.2
Hexabromobiphenyl	513946	538177	4.7

* Standard Areas taken from Initial Cal Level 3
Initial Calibration Date: 24-FEB-2023
<- Indicates standard response outside Limits (-50 to +100%)

	ZB5 Col					ZB35 Col				
Aroclor	Peak#	RT	Shift	Area	Amount	Peak#	RT	Shift	Area	Amount
Aroclor-1221	1	4.731	0.000	14160	250.0	1	4.956	0.000	7300	250.0
Aroclor-1221	2	6.132	0.000	25324	250.0	2	6.296	0.000	13816	250.0
Aroclor-1221	3	6.382	0.000	58795	250.0	3	6.622	0.000	22491	250.0

Total Col1Ave (3 peaks): 250.0 Total Col2Ave (3 peaks): 250.0 RPD = 0
Corrected Ave: < 3 Peaks Corrected Ave: < 3 Peaks

Aroclor-1262	1	10.829	0.000	113046	250.0	1	11.200	0.000	114880	250.0
Aroclor-1262	2	12.244	0.000	183948	250.0	2	11.652	0.000	97844	250.0
Aroclor-1262	3	12.319	0.000	197749	250.0	3	12.434	0.000	111015	250.0
Aroclor-1262	4	12.987	0.000	180727	250.0	4	12.502	0.000	173913	250.0

Total Col1Ave (4 peaks): 250.0 Total Col2Ave (4 peaks): 250.0 RPD = 0
Corrected Ave (3 peaks): 250.0 Corrected Ave (3 peaks): 250.0 RPD = 0

Total PCB Area Col1 (5.906 - 13.793) = 3105316 Col1 Total PCB = 0.4 ppm*

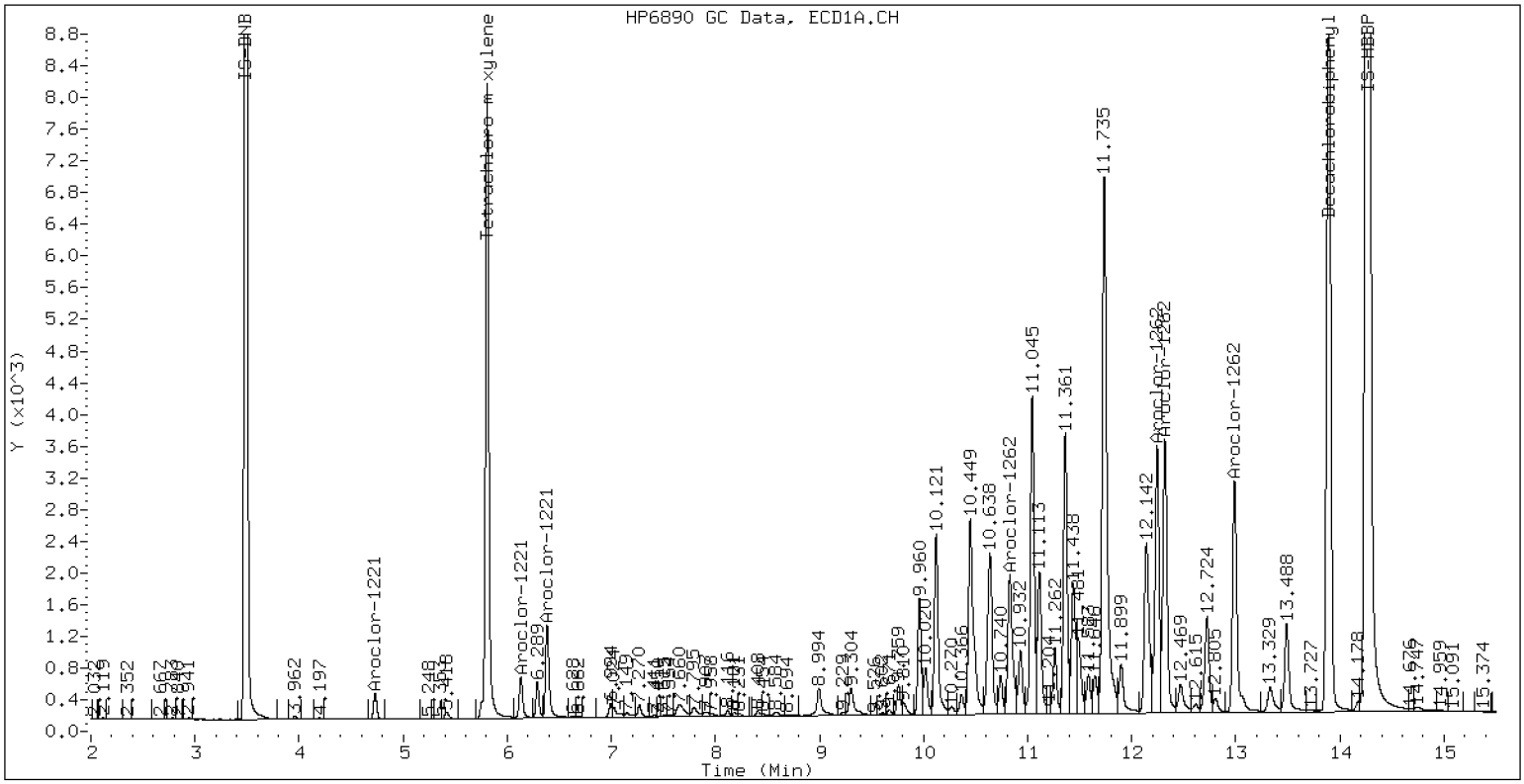
Total PCB Area Col2 (5.785 - 14.019) = 1573107 Col2 Total PCB = 0.4 ppm*

* Quantitated against AR1660 0.25ppm in Ical

PCB-Form 10 Mod.

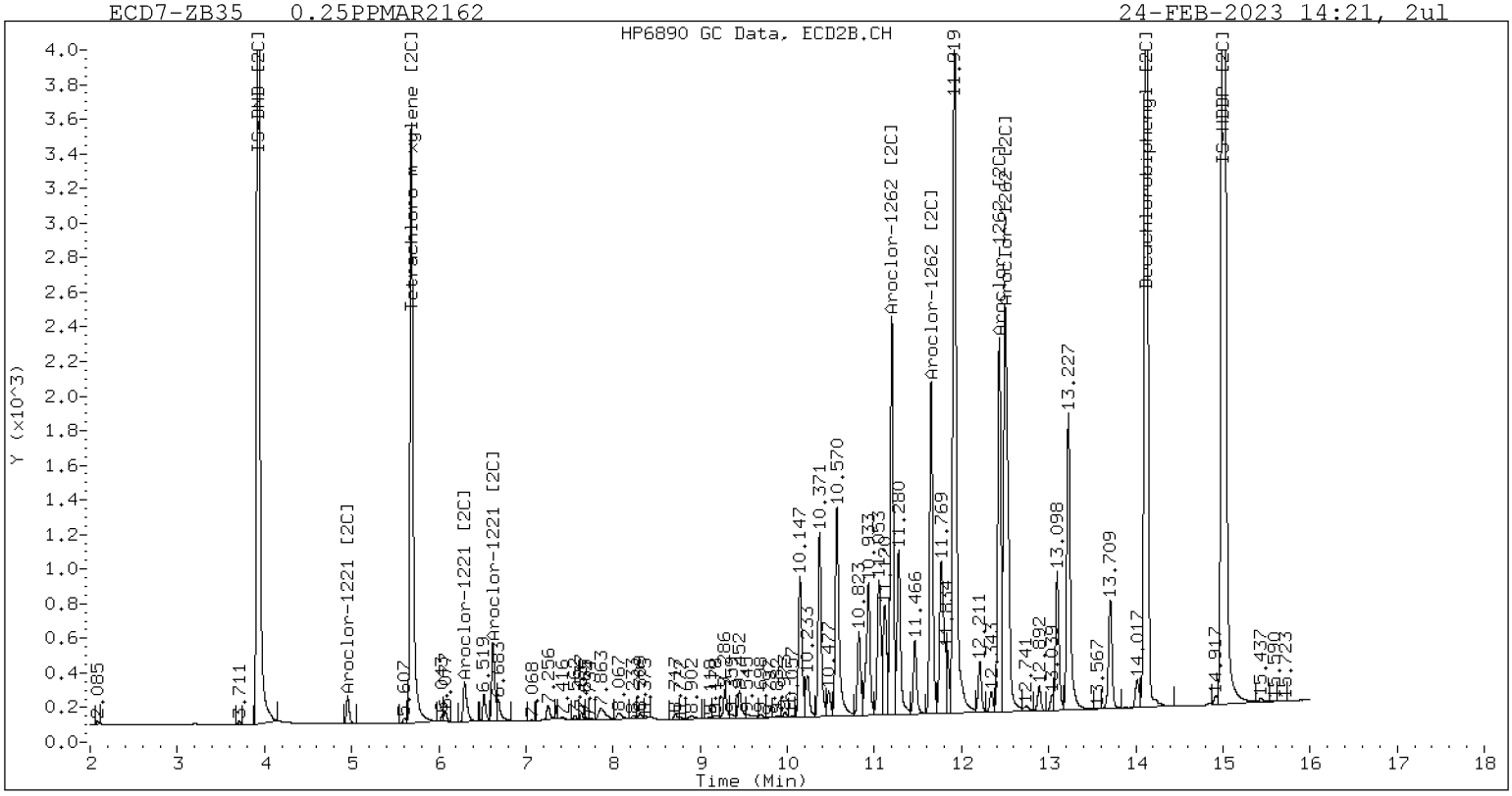
PCB Dual Column Chromatograms

ECD7-ZB5 0.25PPMAR2162 24-FEB-2023 14:21, 2ul



ZB-5 Manual Integration: NO

ECD7-ZB35 0.25PPMAR2162 24-FEB-2023 14:21, 2ul



ZB-35 Manual Integration: NO

Analytical Resources Inc.
Dual Column 608/8082 PCB Quantitation Report

Data file 1: /230224.b/02242312ECD7.D
Data file 2: /230224.b/230224.b/02242312ECD7.D
Method: \\target\share\chem4\ecd7.i\230224.b\PCB.m
Compound Sublist: AR3268.sub
Instrument, Inj. Vol.: ecd7.i, 2ul
Quant Method: Internal Std

ARI ID: 0.25PPMAR3268
Client ID:
Injection Date: 24-FEB-2023 14:42
Report Date: 02/28/2023 09:51
Matrix: NONE
Dilution Factor: 1.0

SURROGATES

ZB5 Col RT	ZB5 Col Shift	ZB5 Col Response	ZB35 Col RT	ZB35 Col Shift	ZB35 Col Response	ZB5 on col	ZB35 on col	RPD	Compound/Flag
5.806	0.000	366416	5.685	0.000	179450	38.0	38.9	2.4	Tetrachloro-m-xylene
13.893	0.000	778191	14.119	0.000	477889	53.0	57.5	8.3	Decachlorobiphenyl

* Indicates RPD > 40%

INTERNAL STANDARD SUMMARY

Column 1

Standard Cpnd	Standard Area*	Sample Area	%D
Bromo-Nitrobenzene	673778	645602	-4.2
Hexabromobiphenyl	1429847	1492154	4.4

Column 2

Standard Cpnd	Standard Area*	Sample Area	%D
Bromo-Nitrobenzene	315256	314042	-0.4
Hexabromobiphenyl	513946	545458	6.1

* Standard Areas taken from Initial Cal Level 3
Initial Calibration Date: 24-FEB-2023
<- Indicates standard response outside Limits (-50 to +100%)

	ZB5 Col					ZB35 Col				
Aroclor	Peak#	RT	Shift	Area	Amount	Peak#	RT	Shift	Area	Amount
Aroclor-1232	1	4.730	0.000	8647	250.0	1	4.956	0.000	4017	250.0
Aroclor-1232	2	6.131	0.000	17148	250.0	2	7.254	0.000	19962	250.0
Aroclor-1232	3	7.656	0.000	77627	250.0	3	7.861	0.000	39913	250.0
Aroclor-1232	4	8.581	0.000	32993	250.0	4	8.715	0.000	11487	250.0
Total Col1Ave (4 peaks):					250.0	Total Col2Ave (4 peaks):				250.0 RPD = 0
Corrected Ave (3 peaks):					250.0	Corrected Ave (3 peaks):				250.0 RPD = 0
Aroclor-1268	1	12.247	0.000	477974	250.0	1	12.432	0.000	274595	250.0
Aroclor-1268	2	12.317	0.000	473326	250.0	2	12.500	0.000	295194	250.0
Aroclor-1268	3	12.699	0.000	405011	250.0	3	12.892	0.000	252048	250.0
Aroclor-1268	4	13.490	0.000	1333528	250.0	4	13.709	0.000	805579	250.0
Total Col1Ave (4 peaks):					250.0	Total Col2Ave (4 peaks):				250.0 RPD = 0
Corrected Ave (3 peaks):					250.0	Corrected Ave (3 peaks):				250.0 RPD = 0

Total PCB Area Col1 (5.906 - 13.793) = 3998414 Col1 Total PCB = 0.5 ppm*

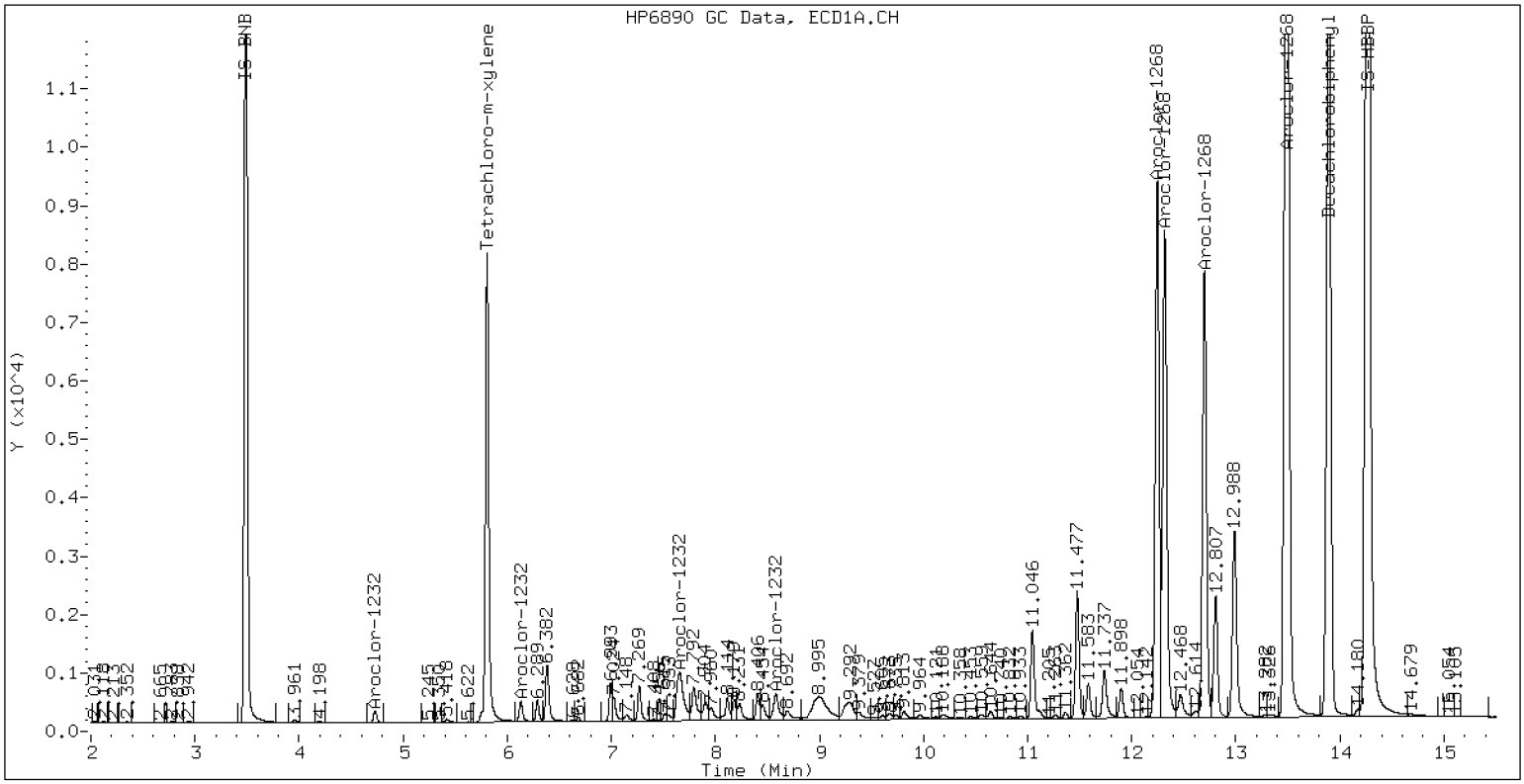
Total PCB Area Col2 (5.785 - 14.019) = 2300029 Col2 Total PCB = 0.6 ppm*

* Quantitated against AR1660 0.25ppm in Ical

PCB-Form 10 Mod.

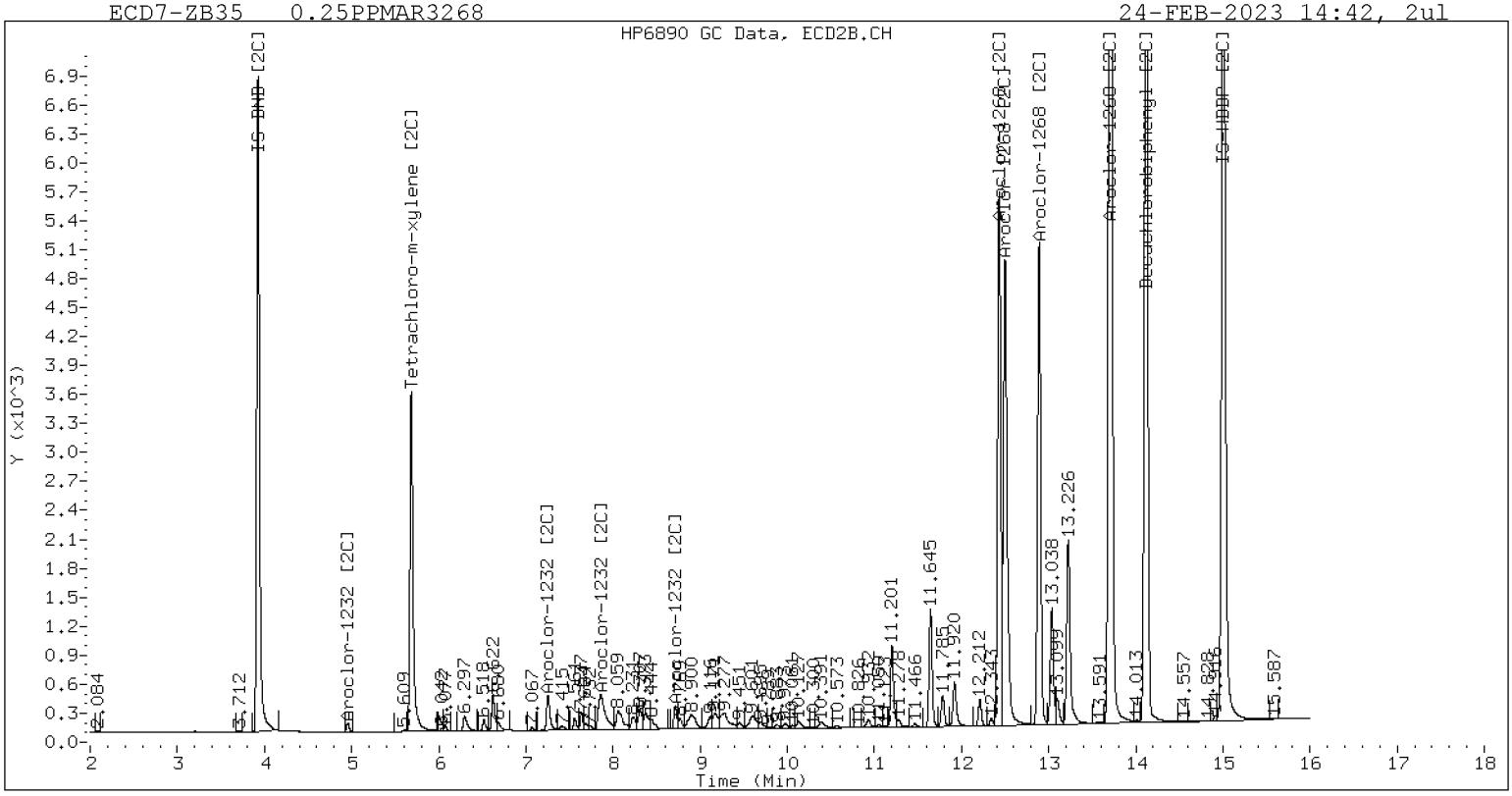
PCB Dual Column Chromatograms

ECD7-ZB5 0.25PPMAR3268 24-FEB-2023 14:42, 2ul



ZB-5 Manual Integration: NO

ECD7-ZB35 0.25PPMAR3268 24-FEB-2023 14:42, 2ul



ZB-35 Manual Integration: NO

Analytical Resources Inc.
Dual Column 608/8082 PCB Quantitation Report

Data file 1: /230224.b/02242313ECD7.D
Data file 2: /230224.b/230224.b/02242313ECD7.D
Method: \\target\share\chem4\ecd7.i\230224.b\PCB.m
Compound Sublist: PCB.sub
Instrument, Inj. Vol.: ecd7.i, 2ul
Quant Method: Internal Std

ARI ID: AR1660SCV
Client ID:
Injection Date: 24-FEB-2023 15:03
Report Date: 02/28/2023 09:51
Matrix: NONE
Dilution Factor: 1.0

SURROGATES

ZB5 Col RT	ZB5 Col Shift	ZB5 Col Response	ZB35 Col RT	ZB35 Col Shift	ZB35 Col Response	ZB5 on col	ZB35 on col	RPD	Compound/Flag
5.807	0.001	337070	5.686	0.001	165848	34.9	35.8	2.3	Tetrachloro-m-xylene
13.895	0.002	515407	14.119	-0.000	316730	34.3	37.3	8.4	Decachlorobiphenyl

* Indicates RPD > 40%

INTERNAL STANDARD SUMMARY

Column 1

Standard Cpnd	Standard Area*	Sample Area	%D
Bromo-Nitrobenzene	673778	645975	-4.1
Hexabromobiphenyl	1429847	1524245	6.6

Column 2

Standard Cpnd	Standard Area*	Sample Area	%D
Bromo-Nitrobenzene	315256	316115	0.3
Hexabromobiphenyl	513946	556950	8.4

* Standard Areas taken from Initial Cal Level 3
Initial Calibration Date: 24-FEB-2023
<- Indicates standard response outside Limits (-50 to +100%)

	ZB5 Col					ZB35 Col				
Aroclor	Peak#	RT	Shift	Area	Amount	Peak#	RT	Shift	Area	Amount
Aroclor-1016	1	7.269	-0.002	59491	242.5	1	7.254	-0.002	44576	240.9
Aroclor-1016	2	7.655	0.001	181090	242.1	2	7.857	0.002	95386	254.2
Aroclor-1016	3	7.790	0.000	88470	242.3	3	8.056	0.002	42160	248.8
Aroclor-1016	4	8.404	-0.001	57980	245.6	4	8.307	0.000	32197	242.1
Total Col1Ave (4 peaks):				243.1		Total Col2Ave (4 peaks):			246.5	RPD = 1
Corrected Ave (3 peaks):				242.3		Corrected Ave (3 peaks):			243.9	RPD = 1
Aroclor-1221	1	4.731	0.000	464	8.0	1	---			0.0
Aroclor-1221	2	6.130	-0.002	9233	89.2	2	6.300	0.004	5379	95.0
Aroclor-1221	3	6.382	-0.001	42570	177.2	3	6.623	0.001	20952	227.2
Total Col1Ave (3 peaks):				91.5		Col2Ave: <3 Quant Peaks				
Aroclor-1232	1	4.731	0.001	464	13.4	1	---			0.0
Aroclor-1232	2	6.130	-0.001	9233	134.5	2	7.254	-0.000	44576	554.6
Aroclor-1232	3	7.655	-0.001	181090	582.9	3	7.857	-0.003	95386	593.5
Aroclor-1232	4	8.580	-0.001	79916	605.2	4	8.713	-0.002	29795	644.2
Total Col1Ave (4 peaks):				334.0		Total Col2Ave (3 peaks):			597.4	RPD = 57*
Corrected Ave (3 peaks):				243.6		Corrected Ave: < 3 Peaks				
Aroclor-1242	1	7.269	-0.002	59491	297.2	1	7.254	-0.002	44576	303.5
Aroclor-1242	2	7.655	-0.001	181090	297.9	2	7.857	-0.000	95386	309.0
Aroclor-1242	3	8.404	-0.001	57980	306.5	3	9.115	-0.052	18754	195.2
Aroclor-1242	4	8.580	0.000	79916	285.8	4	9.697	0.100	1355	11.6
Total Col1Ave (4 peaks):				296.8		Total Col2Ave (4 peaks):			204.8	RPD = 37
Corrected Ave (3 peaks):				293.6		Corrected Ave (3 peaks):			170.1	RPD = 53*
Aroclor-1248	1	8.404	-0.001	57980	184.0	1	8.307	-0.001	32197	213.3
Aroclor-1248	2	8.580	-0.001	79916	199.5	2	8.713	-0.001	29795	190.9
Aroclor-1248	3	8.993	-0.006	71805	95.0	3	9.115	-0.050	18754	104.4
Aroclor-1248	4	9.300	0.006	47348	123.1	4	---			0.0
Total Col1Ave (4 peaks):				150.4		Total Col2Ave (3 peaks):			169.6	RPD = 12
Corrected Ave (3 peaks):				134.0		Corrected Ave: < 3 Peaks				
Aroclor-1254	1	9.300	0.002	47348	73.0	1	9.451	0.001	22438	93.4
Aroclor-1254	2	---			0.0	2	9.972	0.001	2694	13.9
Aroclor-1254	3	9.670	0.002	5461	13.1	3	10.147	0.024	52914	126.5
Aroclor-1254	4	9.807	-0.000	18944	23.4	4	10.370	-0.003	70430	172.8
Aroclor-1254	5	10.121	-0.056	154170	303.3	5	10.568	-0.000	98525	396.9
Total Col1Ave (4 peaks):				103.2		Total Col2Ave (5 peaks):			160.7	RPD = 44*
Corrected Ave (3 peaks):				36.5		Corrected Ave (4 peaks):			101.7	RPD = 94*
Aroclor-1260	1	11.044	0.000	149195	272.1	1	11.653	0.000	82210	251.0
Aroclor-1260	2	11.361	-0.000	153832	268.5	2	11.919	0.001	222226	265.9
Aroclor-1260	3	11.736	0.002	396660	261.0	3	12.435	-0.000	59148	266.7
Aroclor-1260	4	12.140	0.001	190448	248.9	4	12.504	0.002	147180	261.2
Aroclor-1260	5	12.244	-0.000	91385	277.5	NS	---			----
Total Col1Ave (5 peaks):				265.6		Total Col2Ave (4 peaks):			261.2	RPD = 2
Corrected Ave (4 peaks):				262.6		Corrected Ave (3 peaks):			259.4	RPD = 1
Aroclor-1262	1	10.827	-0.002	220238	471.0	1	11.199	-0.001	84479	177.6
Aroclor-1262	2	12.244	0.000	91385	120.1	2	11.653	0.002	82210	203.0
Aroclor-1262	3	12.320	0.001	113066	138.2	3	12.435	0.002	59148	128.7
Aroclor-1262	4	12.988	0.001	102156	136.7	4	12.504	0.002	147180	204.4
Total Col1Ave (4 peaks):				216.5		Total Col2Ave (4 peaks):			178.4	RPD = 19
Corrected Ave (3 peaks):				131.7		Corrected Ave (3 peaks):			169.8	RPD = 25
Aroclor-1268	1	12.244	-0.003	91385	46.8	1	12.435	0.003	59148	52.7
Aroclor-1268	2	12.320	0.003	113066	58.5	2	12.504	0.004	147180	122.1
Aroclor-1268	3	12.726	0.027	46633	28.2	3	12.893	0.001	2874	2.8
Aroclor-1268	4	13.489	-0.000	25567	4.7	4	13.709	-0.000	13041	4.0
Total Col1Ave (4 peaks):				34.5		Total Col2Ave (4 peaks):			45.4	RPD = 27
Corrected Ave (3 peaks):				26.6		Corrected Ave (3 peaks):			19.8	RPD = 29

Total PCB Area Col1 (5.906 - 13.793) = 3743076 Col1 Total PCB = 0.5 ppm*

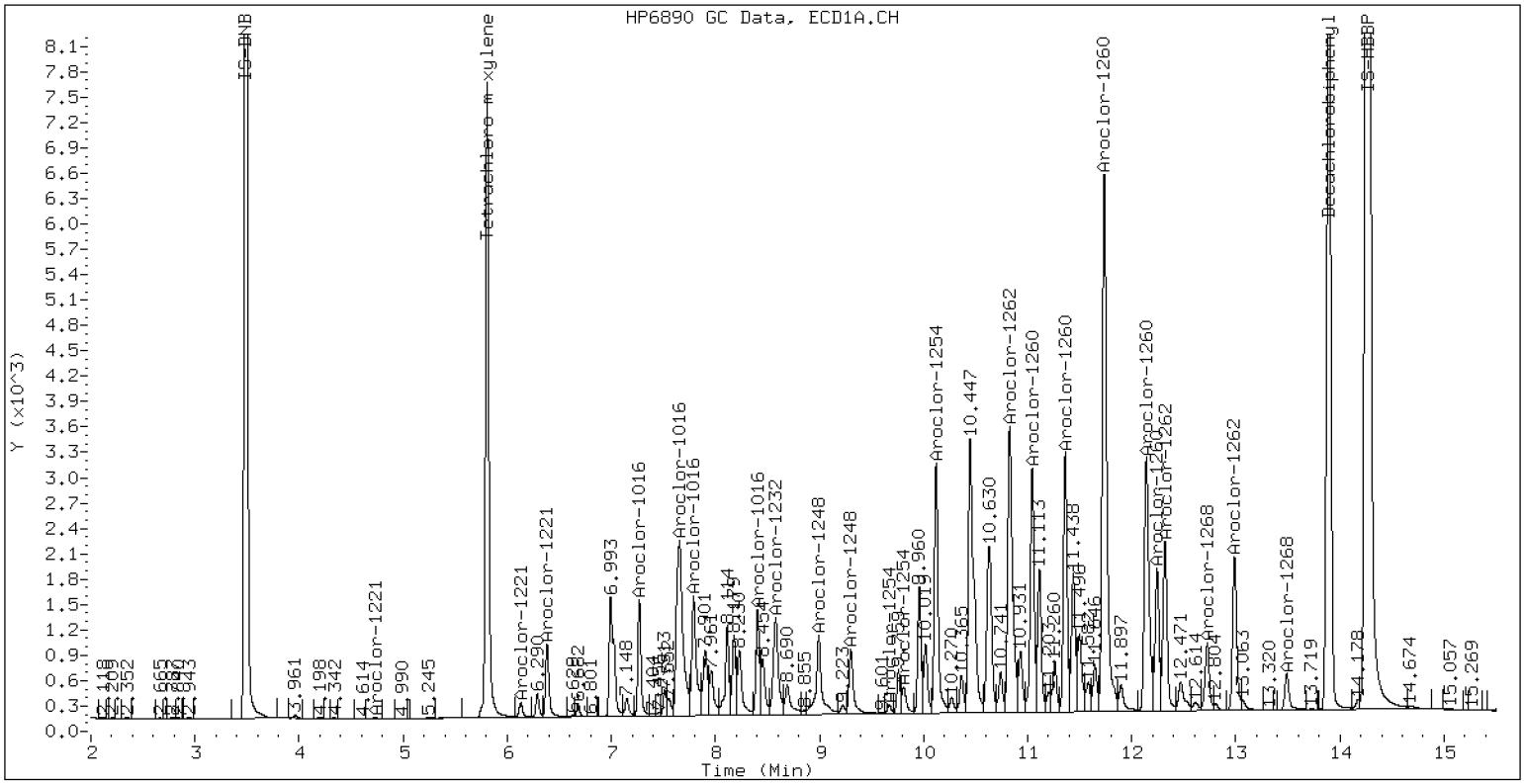
Total PCB Area Col2 (5.785 - 14.019) = 1897008 Col2 Total PCB = 0.5 ppm*

* Quantitated against AR1660 0.25ppm in Ical

PCB-Form 10 Mod.

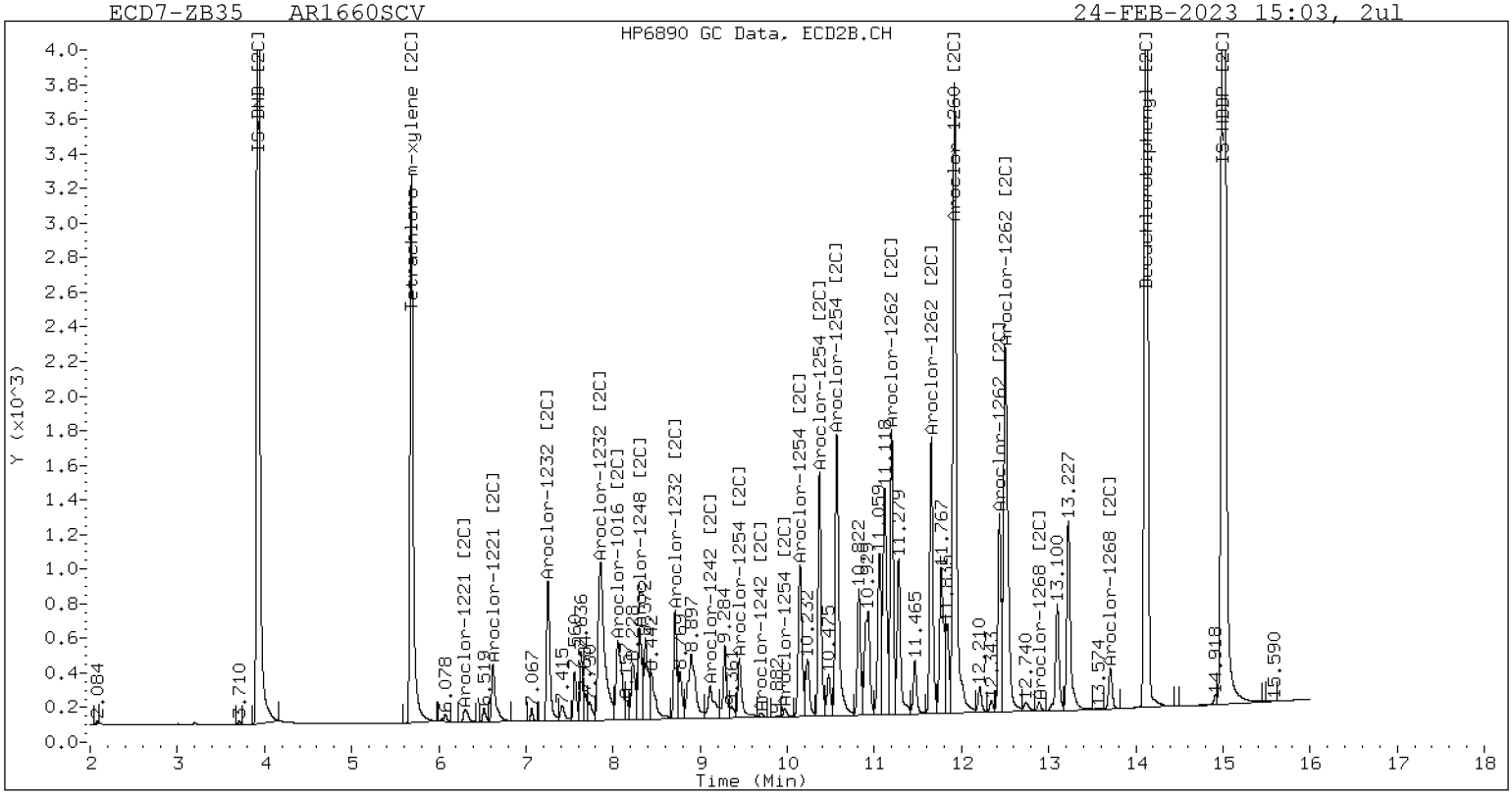
PCB Dual Column Chromatograms

ECD7-ZB5 AR1660SCV 24-FEB-2023 15:03, 2ul



ZB-5 Manual Integration: NO

ECD7-ZB35 AR1660SCV 24-FEB-2023 15:03, 2ul



ZB-35 Manual Integration: NO

Analytical Resources Inc.
Dual Column 608/8082 PCB Quantitation Report

Data file 1: /230224.b/02242314ECD7.D
Data file 2: /230224.b/230224.b/02242314ECD7.D
Method: \\target\share\chem4\ecd7.i\230224.b\PCB.m
Compound Sublist: PCB.sub
Instrument, Inj. Vol.: ecd7.i, 2ul
Quant Method: Internal Std

ARI ID: AR1242SCV
Client ID:
Injection Date: 24-FEB-2023 15:24
Report Date: 02/28/2023 09:51
Matrix: NONE
Dilution Factor: 1.0

SURROGATES

ZB5 Col RT	ZB5 Col Shift	ZB5 Col Response	ZB35 Col RT	ZB35 Col Shift	ZB35 Col Response	ZB5 on col	ZB35 on col	RPD	Compound/Flag
5.808	0.002	354283	5.686	0.001	172455	33.6	34.5	2.6	Tetrachloro-m-xylene
13.895	0.002	567088	14.120	0.001	347430	37.0	40.3	8.6	Decachlorobiphenyl

* Indicates RPD > 40%

INTERNAL STANDARD SUMMARY

Column 1

Standard Cpnd	Standard Area*	Sample Area	%D
Bromo-Nitrobenzene	673778	705650	4.7
Hexabromobiphenyl	1429847	1555683	8.8

Column 2

Standard Cpnd	Standard Area*	Sample Area	%D
Bromo-Nitrobenzene	315256	340433	8.0
Hexabromobiphenyl	513946	565609	10.1

* Standard Areas taken from Initial Cal Level 3
Initial Calibration Date: 24-FEB-2023
<- Indicates standard response outside Limits (-50 to +100%)

	ZB5 Col					ZB35 Col				
Aroclor	Peak#	RT	Shift	Area	Amount	Peak#	RT	Shift	Area	Amount
Aroclor-1016	1	7.270	-0.000	39927	149.0	1	7.256	0.000	32417	162.7
Aroclor-1016	2	7.653	-0.001	132339	162.0	2	7.856	0.001	69235	171.3
Aroclor-1016	3	7.791	0.001	59310	148.7	3	8.055	0.000	29473	161.5
Aroclor-1016	4	8.405	0.000	42537	165.0	4	8.307	-0.000	22792	159.2
Total Col1Ave (4 peaks):				156.2		Total Col2Ave (4 peaks):			163.7	RPD = 5
Corrected Ave (3 peaks):				153.2		Corrected Ave (3 peaks):			161.1	RPD = 5
Aroclor-1221	1	4.733	0.002	319	5.0	1	---			0.0
Aroclor-1221	2	6.131	-0.001	6534	57.8	2	6.319	0.022	4365	71.6
Aroclor-1221	3	6.384	0.001	29664	113.0	3	6.624	0.002	14916	150.2
Total Col1Ave (3 peaks):				58.6		Col2Ave: <3 Quant Peaks				
Aroclor-1232	1	4.733	0.003	319	8.4	1	---			0.0
Aroclor-1232	2	6.131	0.000	6534	87.2	2	7.256	0.002	32417	374.5
Aroclor-1232	3	7.653	-0.003	132339	389.9	3	7.856	-0.004	69235	400.0
Aroclor-1232	4	8.579	-0.002	69445	481.4	4	8.714	-0.001	22167	445.0
Total Col1Ave (4 peaks):				241.7		Total Col2Ave (3 peaks):			406.5	RPD = 51*
Corrected Ave (3 peaks):				161.8		Corrected Ave: < 3 Peaks				
Aroclor-1242	1	7.270	-0.001	39927	182.6	1	7.256	0.000	32417	205.0
Aroclor-1242	2	7.653	-0.003	132339	199.3	2	7.856	-0.002	69235	208.2
Aroclor-1242	3	8.405	-0.000	42537	205.9	3	9.164	-0.004	23068	223.0
Aroclor-1242	4	8.579	-0.000	69445	227.4	4	9.587	-0.010	31021	246.1
Total Col1Ave (4 peaks):				203.8		Total Col2Ave (4 peaks):			220.6	RPD = 8
Corrected Ave (3 peaks):				195.9		Corrected Ave (3 peaks):			212.1	RPD = 8
Aroclor-1248	1	8.405	0.000	42537	123.5	1	8.307	-0.001	22792	140.2
Aroclor-1248	2	8.579	-0.001	69445	158.7	2	8.714	-0.000	22167	131.9
Aroclor-1248	3	9.001	0.003	91942	111.4	3	9.164	-0.002	23068	119.3
Aroclor-1248	4	9.294	-0.000	38711	92.1	4	9.587	-0.003	31021	133.6
Total Col1Ave (4 peaks):				121.4		Total Col2Ave (4 peaks):			131.2	RPD = 8
Corrected Ave (3 peaks):				109.0		Corrected Ave (3 peaks):			128.3	RPD = 16
Aroclor-1254	1	9.294	-0.005	38711	54.6	1	9.450	0.001	13131	50.7
Aroclor-1254	2	9.377	-0.000	17371	54.5	2	9.970	0.000	8340	40.1
Aroclor-1254	3	9.668	-0.000	16373	35.9	3	10.123	-0.000	16364	36.3
Aroclor-1254	4	9.807	-0.001	27490	31.0	4	10.382	0.009	16062	36.6
Aroclor-1254	5	10.175	-0.001	20494	36.9	5	10.572	0.004	4818	18.0
Total Col1Ave (5 peaks):				42.6		Total Col2Ave (5 peaks):			36.4	RPD = 16
Corrected Ave (4 peaks):				39.6		Corrected Ave (4 peaks):			32.8	RPD = 19
Aroclor-1260	1	11.048	0.003	794	1.4	1	11.665	0.012	1652	5.0
Aroclor-1260	2	11.366	0.005	814	1.4	2	11.926	0.008	842	1.0
Aroclor-1260	3	11.739	0.006	1848	1.2	3	12.438	0.002	483	2.1
Aroclor-1260	4	12.145	0.006	1372	1.8	4	12.506	0.004	790	1.4
Aroclor-1260	5	---			0.0	NS	---			----
Total Col1Ave (4 peaks):				1.4		Total Col2Ave (4 peaks):			2.4	RPD = 49*
Corrected Ave (3 peaks):				1.3		Corrected Ave (3 peaks):			1.5	RPD = 12
Aroclor-1262	1	10.832	0.003	13157	27.6	1	11.121	-0.079	6113	12.7
Aroclor-1262	2	12.145	-0.098	1372	1.8	2	11.665	0.013	1652	4.0
Aroclor-1262	3	---			0.0	3	12.438	0.004	483	1.0
Aroclor-1262	4	13.038	0.051	842	1.1	4	12.506	0.004	790	1.1
Total Col1Ave (3 peaks):				10.1		Total Col2Ave (4 peaks):			4.7	RPD = 73*
Corrected Ave: < 3 Peaks						Corrected Ave (3 peaks):			2.0	
Aroclor-1268	1	---			0.0	1	12.438	0.006	483	0.4
Aroclor-1268	2	---			0.0	2	12.506	0.006	790	0.6
Aroclor-1268	3	12.617	-0.082	5851	3.5	3	12.899	0.007	491	0.5
Aroclor-1268	4	13.500	0.010	1745	0.3	4	13.714	0.005	379	0.1
Col1Ave: <3 Quant Peaks						Col2Ave:			0.4	

Total PCB Area Col1 (5.906 - 13.793) = 1149784 Col1 Total PCB = 0.1 ppm*

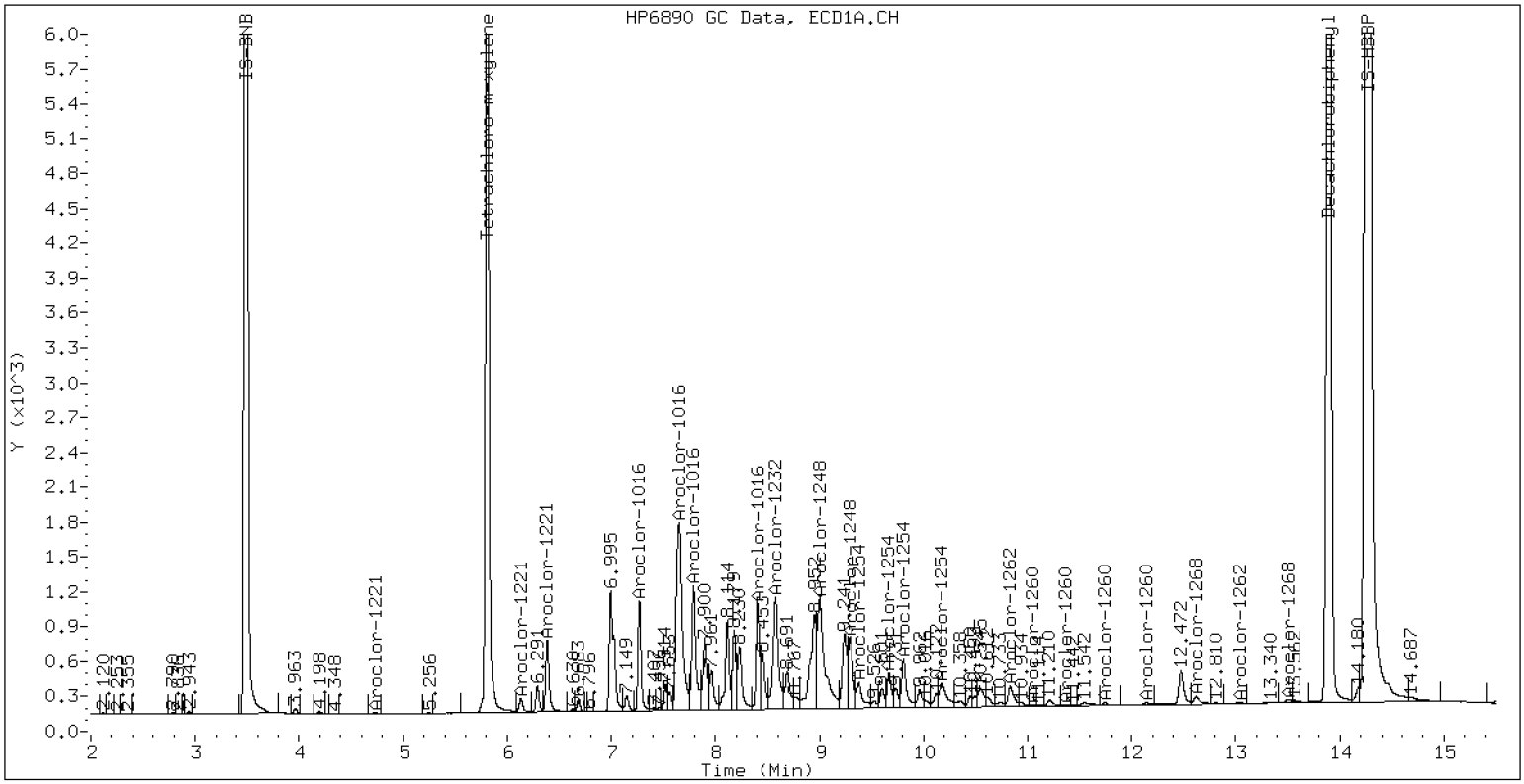
Total PCB Area Col2 (5.785 - 14.019) = 572210 Col2 Total PCB = 0.1 ppm*

* Quantitated against AR1660 0.25ppm in Ical

PCB-Form 10 Mod.

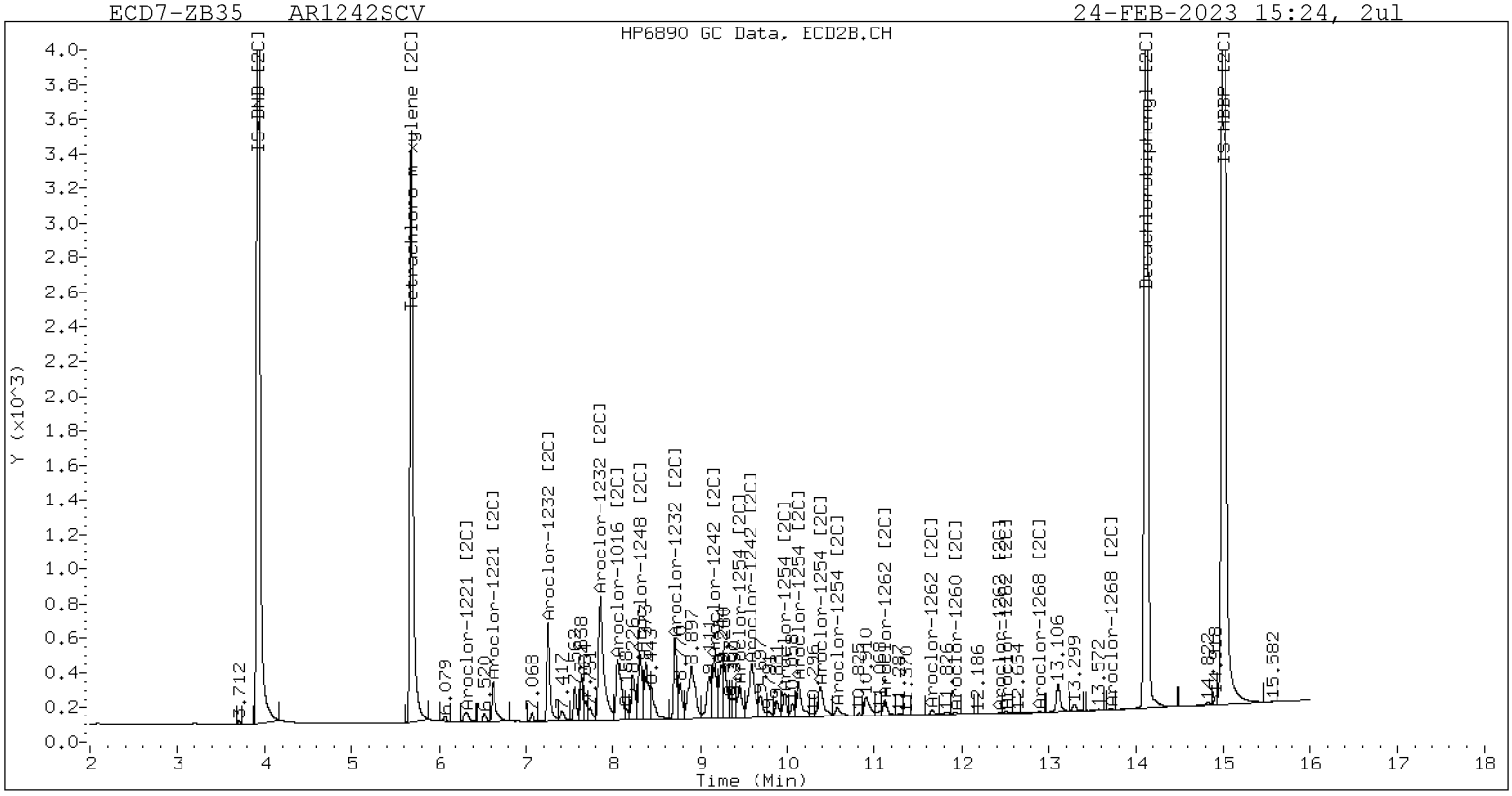
PCB Dual Column Chromatograms

ECD7-ZB5 AR1242SCV 24-FEB-2023 15:24, 2ul



ZB-5 Manual Integration: NO

ECD7-ZB35 AR1242SCV 24-FEB-2023 15:24, 2ul



ZB-35 Manual Integration: NO

Analytical Resources Inc.
Dual Column 608/8082 PCB Quantitation Report

Data file 1: /230224.b/02242315ECD7.D
Data file 2: /230224.b/230224.b/02242315ECD7.D
Method: \\target\share\chem4\ecd7.i\230224.b\PCB.m
Compound Sublist: PCB.sub
Instrument, Inj. Vol.: ecd7.i, 2ul
Quant Method: Internal Std

ARI ID: AR1248SCV
Client ID:
Injection Date: 24-FEB-2023 15:45
Report Date: 02/28/2023 09:51
Matrix: NONE
Dilution Factor: 1.0

SURROGATES

ZB5 Col RT	ZB5 Col Shift	ZB5 Col Response	ZB35 Col RT	ZB35 Col Shift	ZB35 Col Response	ZB5 on col	ZB35 on col	RPD	Compound/Flag
5.809	0.002	336655	5.687	0.002	168719	34.9	36.4	4.2	Tetrachloro-m-xylene
13.894	0.001	499162	14.118	-0.001	308317	33.1	36.3	9.2	Decachlorobiphenyl

* Indicates RPD > 40%

INTERNAL STANDARD SUMMARY

Column 1

Standard Cpnd	Standard Area*	Sample Area	%D
Bromo-Nitrobenzene	673778	646554	-4.0
Hexabromobiphenyl	1429847	1529451	7.0

Column 2

Standard Cpnd	Standard Area*	Sample Area	%D
Bromo-Nitrobenzene	315256	316066	0.3
Hexabromobiphenyl	513946	557213	8.4

* Standard Areas taken from Initial Cal Level 3
Initial Calibration Date: 24-FEB-2023
<- Indicates standard response outside Limits (-50 to +100%)

	ZB5 Col					ZB35 Col				
Aroclor	Peak#	RT	Shift	Area	Amount	Peak#	RT	Shift	Area	Amount
Aroclor-1016	1	7.271	0.000	19773	80.5	1	7.254	-0.002	16926	91.5
Aroclor-1016	2	7.653	-0.001	88099	117.7	2	7.857	0.001	45733	121.9
Aroclor-1016	3	7.794	0.003	35915	98.3	3	8.060	0.005	8078	47.7
Aroclor-1016	4	8.406	0.001	77842	329.5	4	8.307	0.000	37348	280.9
Total Col1Ave (4 peaks):					156.5	Total Col2Ave (4 peaks):				135.5 RPD = 14
Corrected Ave (3 peaks):					98.8	Corrected Ave (3 peaks):				87.0 RPD = 13
Aroclor-1221	1	---			0.0	1	---			0.0
Aroclor-1221	2	6.133	0.001	680	6.6	2	6.326	0.030	1966	34.7
Aroclor-1221	3	6.384	0.002	3390	14.1	3	6.631	0.009	1571	17.0
Col1Ave: <3 Quant Peaks						Col2Ave: <3 Quant Peaks				
Aroclor-1232	1	---			0.0	1	---			0.0
Aroclor-1232	2	6.133	0.002	680	9.9	2	7.254	-0.000	16926	210.6
Aroclor-1232	3	7.653	-0.002	88099	283.3	3	7.857	-0.004	45733	284.6
Aroclor-1232	4	8.581	-0.000	99572	753.4	4	8.714	-0.001	38224	826.6
Total Col1Ave (3 peaks):					348.9	Total Col2Ave (3 peaks):				440.6 RPD = 23
Corrected Ave: < 3 Peaks						Corrected Ave: < 3 Peaks				
Aroclor-1242	1	7.271	-0.000	19773	98.7	1	7.254	-0.002	16926	115.3
Aroclor-1242	2	7.653	-0.003	88099	144.8	2	7.857	-0.001	45733	148.2
Aroclor-1242	3	8.406	0.000	77842	411.2	3	9.165	-0.002	45021	468.7
Aroclor-1242	4	8.581	0.001	99572	355.8	4	9.590	-0.008	53613	458.1
Total Col1Ave (4 peaks):					252.6	Total Col2Ave (4 peaks):				297.6 RPD = 16
Corrected Ave (3 peaks):					199.8	Corrected Ave (3 peaks):				240.5 RPD = 19
Aroclor-1248	1	8.406	0.000	77842	246.8	1	8.307	-0.001	37348	247.5
Aroclor-1248	2	8.581	0.000	99572	248.3	2	8.714	-0.000	38224	245.0
Aroclor-1248	3	8.998	-0.000	186857	247.0	3	9.165	-0.000	45021	250.7
Aroclor-1248	4	9.294	-0.000	98398	255.5	4	9.590	-0.001	53613	248.7
Total Col1Ave (4 peaks):					249.4	Total Col2Ave (4 peaks):				248.0 RPD = 1
Corrected Ave (3 peaks):					247.4	Corrected Ave (3 peaks):				247.0 RPD = 0
Aroclor-1254	1	9.294	-0.004	98398	151.6	1	9.450	0.001	21823	90.8
Aroclor-1254	2	9.377	-0.001	49616	169.9	2	9.971	0.001	19450	100.6
Aroclor-1254	3	9.669	0.001	40230	96.4	3	10.124	0.000	36574	87.5
Aroclor-1254	4	9.808	0.001	68500	84.4	4	10.389	0.016	35100	86.1
Aroclor-1254	5	10.183	0.007	47365	93.1	5	10.573	0.004	5676	22.9
Total Col1Ave (5 peaks):					119.1	Total Col2Ave (5 peaks):				77.6 RPD = 42*
Corrected Ave (4 peaks):					106.4	Corrected Ave (4 peaks):				71.8 RPD = 39
Aroclor-1260	1	11.047	0.003	1670	3.0	1	11.662	0.009	2055	6.3
Aroclor-1260	2	11.362	0.001	1111	1.9	2	11.924	0.007	1466	1.8
Aroclor-1260	3	11.739	0.005	2107	1.4	3	12.434	-0.002	573	2.6
Aroclor-1260	4	12.144	0.005	1379	1.8	4	12.505	0.003	1003	1.8
Aroclor-1260	5	12.251	0.006	698	2.1	NS	---			----
Total Col1Ave (5 peaks):					2.1	Total Col2Ave (4 peaks):				3.1 RPD = 41*
Corrected Ave (4 peaks):					1.8	Corrected Ave (3 peaks):				2.0 RPD = 12
Aroclor-1262	1	10.833	0.005	15355	32.7	1	11.122	-0.079	7225	15.2
Aroclor-1262	2	12.251	0.007	698	0.9	2	11.662	0.011	2055	5.1
Aroclor-1262	3	12.321	0.002	836	1.0	3	12.434	0.000	573	1.2
Aroclor-1262	4	12.991	0.004	1043	1.4	4	12.505	0.003	1003	1.4
Total Col1Ave (4 peaks):					9.0	Total Col2Ave (4 peaks):				5.7 RPD = 45*
Corrected Ave (3 peaks):					1.1	Corrected Ave (3 peaks):				2.6 RPD = 80*
Aroclor-1268	1	12.251	0.004	698	0.4	1	12.434	0.002	573	0.5
Aroclor-1268	2	12.321	0.004	836	0.4	2	12.505	0.005	1003	0.8
Aroclor-1268	3	12.700	0.001	2449	1.5	3	12.892	0.001	721	0.7
Aroclor-1268	4	13.493	0.003	7547	1.4	4	13.708	-0.001	2265	0.7
Total Col1Ave (4 peaks):					0.9	Total Col2Ave (4 peaks):				0.7 RPD = 29
Corrected Ave (3 peaks):					0.7	Corrected Ave (3 peaks):				0.6 RPD = 13

Total PCB Area Col1 (5.906 - 13.793) = 1574335 Col1 Total PCB = 0.2 ppm*

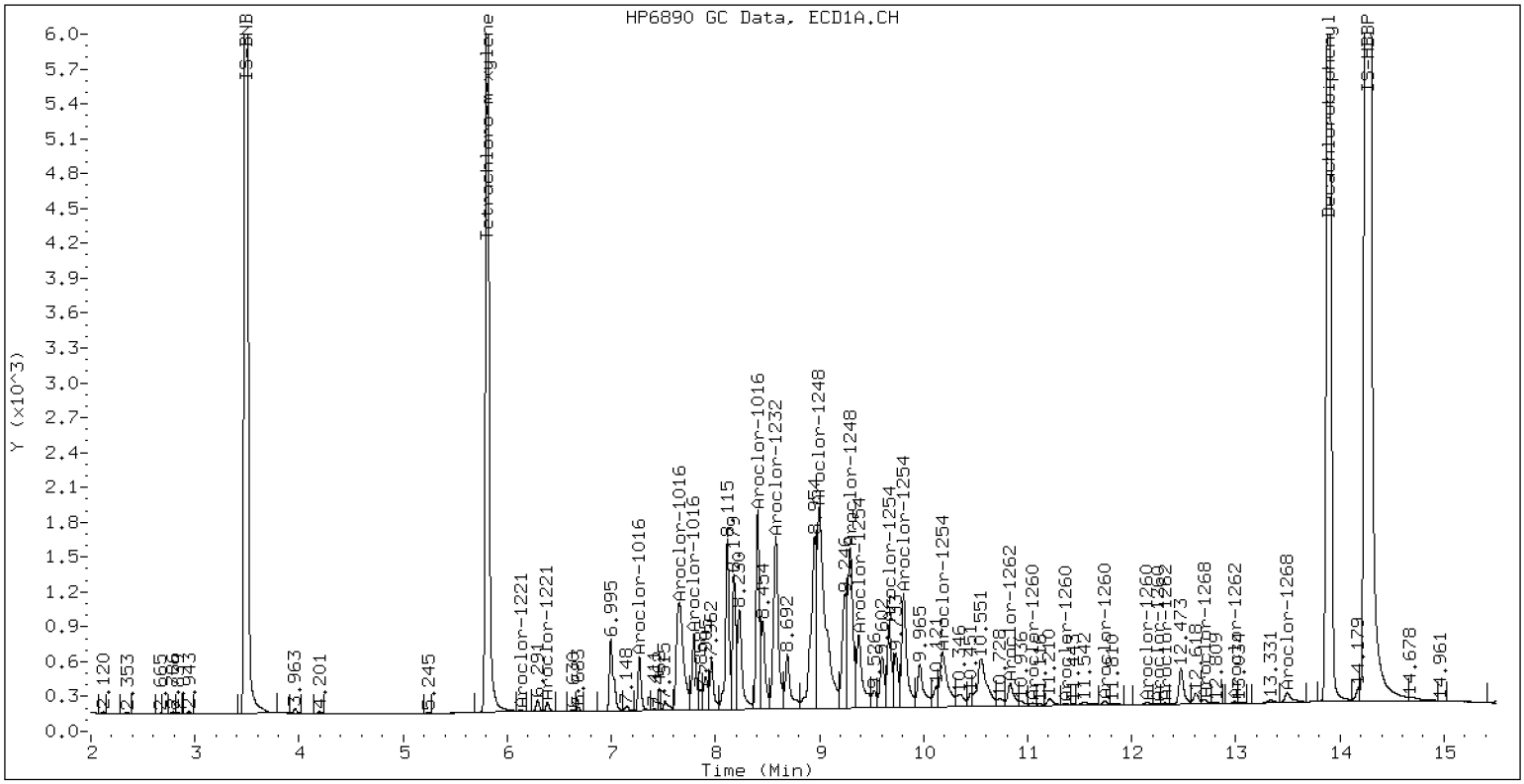
Total PCB Area Col2 (5.785 - 14.019) = 746330 Col2 Total PCB = 0.2 ppm*

* Quantitated against AR1660 0.25ppm in Ical

PCB-Form 10 Mod.

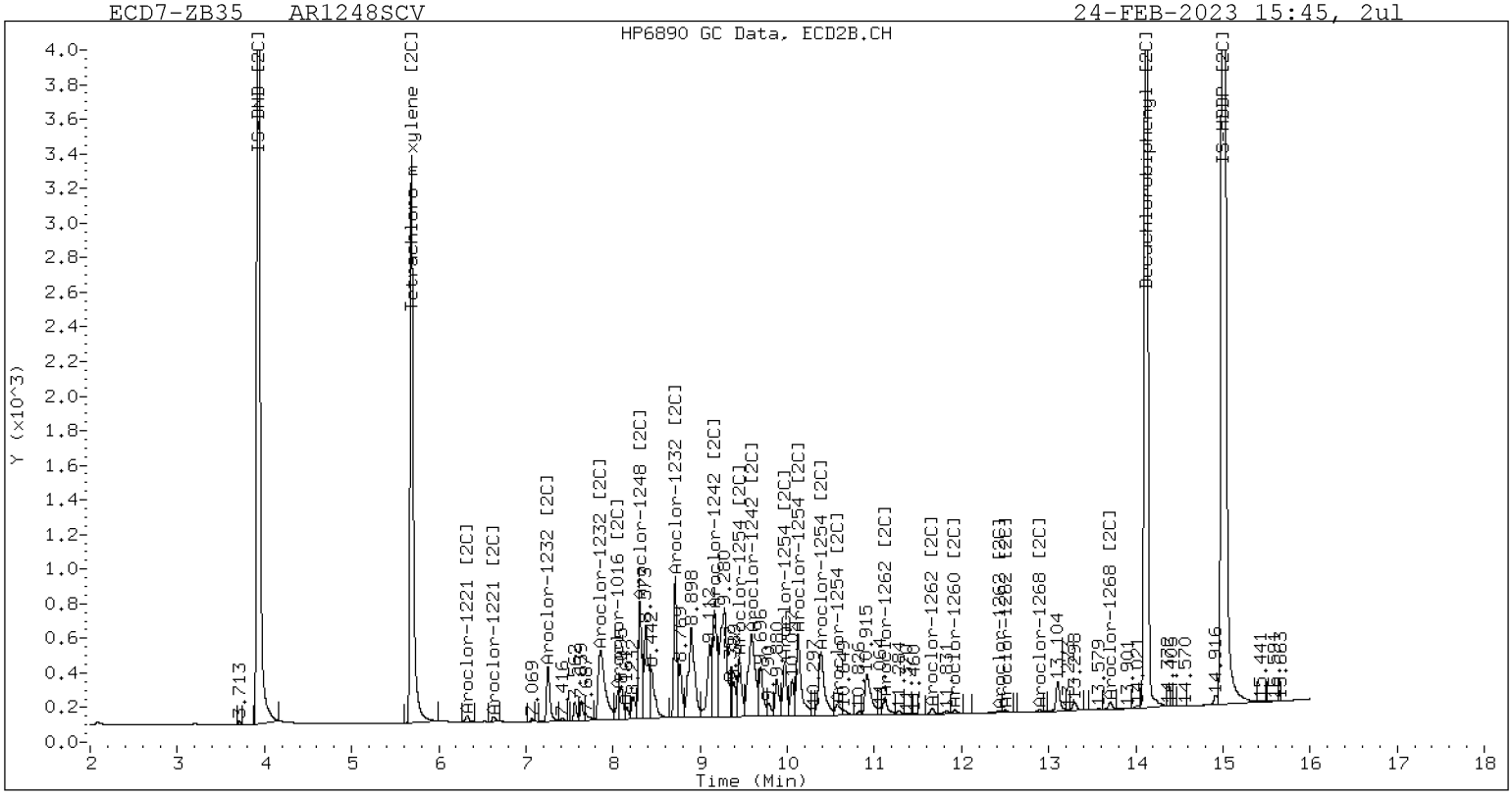
PCB Dual Column Chromatograms

ECD7-ZB5 AR1248SCV 24-FEB-2023 15:45, 2ul



ZB-5 Manual Integration: NO

ECD7-ZB35 AR1248SCV 24-FEB-2023 15:45, 2ul



ZB-35 Manual Integration: NO

Analytical Resources Inc.
Dual Column 608/8082 PCB Quantitation Report

Data file 1: /230224.b/02242316ECD7.D
Data file 2: /230224.b/230224.b/02242316ECD7.D
Method: \\target\share\chem4\ecd7.i\230224.b\PCB.m
Compound Sublist: PCB.sub
Instrument, Inj. Vol.: ecd7.i, 2ul
Quant Method: Internal Std

ARI ID: AR1254SCV
Client ID:
Injection Date: 24-FEB-2023 16:06
Report Date: 02/28/2023 09:51
Matrix: NONE
Dilution Factor: 1.0

SURROGATES

ZB5 Col RT	ZB5 Col Shift	ZB5 Col Response	ZB35 Col RT	ZB35 Col Shift	ZB35 Col Response	ZB5 on col	ZB35 on col	RPD	Compound/Flag
5.806	-0.000	354312	5.686	0.001	174604	36.1	37.1	2.6	Tetrachloro-m-xylene
13.895	0.002	540961	14.119	-0.000	329134	34.6	37.9	9.0	Decachlorobiphenyl

* Indicates RPD > 40%

INTERNAL STANDARD SUMMARY

Column 1

Standard Cpnd	Standard Area*	Sample Area	%D
Bromo-Nitrobenzene	673778	656887	-2.5
Hexabromobiphenyl	1429847	1585505	10.9

Column 2

Standard Cpnd	Standard Area*	Sample Area	%D
Bromo-Nitrobenzene	315256	320936	1.8
Hexabromobiphenyl	513946	570006	10.9

* Standard Areas taken from Initial Cal Level 3
Initial Calibration Date: 24-FEB-2023
<- Indicates standard response outside Limits (-50 to +100%)

	ZB5 Col					ZB35 Col				
Aroclor	Peak#	RT	Shift	Area	Amount	Peak#	RT	Shift	Area	Amount
Aroclor-1016	1	7.270	0.000	565	2.3	1	7.255	-0.001	387	2.1
Aroclor-1016	2	7.656	0.002	1875	2.5	2	7.854	-0.002	860	2.3
Aroclor-1016	3	7.792	0.002	1106	3.0	3	8.098	0.043	578	3.4
Aroclor-1016	4	8.405	0.000	29924	124.7	4	8.307	0.000	21985	162.9
Total Col1Ave (4 peaks):					33.1	Total Col2Ave (4 peaks):				42.6 RPD = 25
Corrected Ave (3 peaks):					2.6	Corrected Ave (3 peaks):				2.6 RPD = 0
Aroclor-1221	1	---			0.0	1	---			0.0
Aroclor-1221	2	---			0.0	2	6.325	0.028	1947	33.9
Aroclor-1221	3	---			0.0	3	6.637	0.015	368	3.9
Col1Ave: <3 Quant Peaks						Col2Ave: <3 Quant Peaks				
Aroclor-1232	1	---			0.0	1	---			0.0
Aroclor-1232	2	---			0.0	2	7.255	0.001	387	4.7
Aroclor-1232	3	7.656	0.000	1875	5.9	3	7.854	-0.007	860	5.3
Aroclor-1232	4	8.583	0.002	12327	91.8	4	8.715	0.000	15013	319.7
Col1Ave: <3 Quant Peaks						Col2Ave: 109.9				
Aroclor-1242	1	7.270	-0.000	565	2.8	1	7.255	-0.001	387	2.6
Aroclor-1242	2	7.656	0.000	1875	3.0	2	7.854	-0.004	860	2.7
Aroclor-1242	3	8.405	-0.000	29924	155.6	3	9.169	0.002	21933	224.9
Aroclor-1242	4	8.583	0.003	12327	43.4	4	9.545	-0.053	34065	286.6
Total Col1Ave (4 peaks):					51.2	Total Col2Ave (4 peaks):				129.2 RPD = 87*
Corrected Ave (3 peaks):					16.4	Corrected Ave (3 peaks):				76.7 RPD = 130*
Aroclor-1248	1	8.405	0.000	29924	93.4	1	8.307	-0.001	21985	143.5
Aroclor-1248	2	8.583	0.002	12327	30.3	2	8.715	0.001	15013	94.8
Aroclor-1248	3	8.992	-0.007	145580	189.4	3	9.169	0.004	21933	120.3
Aroclor-1248	4	9.298	0.003	155450	397.3	4	9.545	-0.046	34065	155.6
Total Col1Ave (4 peaks):					177.6	Total Col2Ave (4 peaks):				128.5 RPD = 32
Corrected Ave (3 peaks):					104.3	Corrected Ave (3 peaks):				119.5 RPD = 14
Aroclor-1254	1	9.298	-0.001	155450	235.7	1	9.450	0.001	58639	240.4
Aroclor-1254	2	9.377	-0.001	69801	235.3	2	9.971	0.000	47008	239.5
Aroclor-1254	3	9.668	-0.000	100839	237.8	3	10.124	0.000	100062	235.7
Aroclor-1254	4	9.807	0.000	190544	231.1	4	10.373	0.000	99535	240.5
Aroclor-1254	5	10.176	-0.000	122321	236.7	5	10.570	0.001	61549	244.2
Total Col1Ave (5 peaks):					235.3	Total Col2Ave (5 peaks):				240.1 RPD = 2
Corrected Ave (4 peaks):					234.7	Corrected Ave (4 peaks):				239.0 RPD = 2
Aroclor-1260	1	11.043	-0.002	12288	21.5	1	11.661	0.008	29062	86.7
Aroclor-1260	2	11.361	-0.001	13660	22.9	2	11.921	0.003	22238	26.0
Aroclor-1260	3	11.736	0.002	37632	23.8	3	12.441	0.005	3555	15.7
Aroclor-1260	4	12.141	0.002	27105	34.1	4	12.503	0.001	13126	22.8
Aroclor-1260	5	12.320	0.076	2381	6.9	NS	---			----
Total Col1Ave (5 peaks):					21.9	Total Col2Ave (4 peaks):				37.8 RPD = 53*
Corrected Ave (4 peaks):					18.8	Corrected Ave (3 peaks):				21.5 RPD = 13
Aroclor-1262	1	10.827	-0.002	220626	453.6	1	11.281	0.081	13562	27.9
Aroclor-1262	2	12.320	0.076	2381	3.0	2	11.661	0.009	29062	70.1
Aroclor-1262	3	---			0.0	3	12.441	0.007	3555	7.6
Aroclor-1262	4	12.989	0.002	3225	4.1	4	12.503	0.001	13126	17.8
Total Col1Ave (3 peaks):					153.6	Total Col2Ave (4 peaks):				30.8 RPD = 133*
Corrected Ave: < 3 Peaks						Corrected Ave (3 peaks):				17.7
Aroclor-1268	1	12.320	0.074	2381	1.2	1	12.441	0.009	3555	3.1
Aroclor-1268	2	---			0.0	2	12.503	0.003	13126	10.6
Aroclor-1268	3	12.701	0.002	2939	1.7	3	12.892	0.000	772	0.7
Aroclor-1268	4	13.493	0.003	9164	1.6	4	13.707	-0.002	2801	0.8
Total Col1Ave (3 peaks):					1.5	Total Col2Ave (4 peaks):				3.8 RPD = 87*
Corrected Ave: < 3 Peaks						Corrected Ave (3 peaks):				1.6

Total PCB Area Col1 (5.906 - 13.793) = 2118645 Col1 Total PCB = 0.3 ppm*

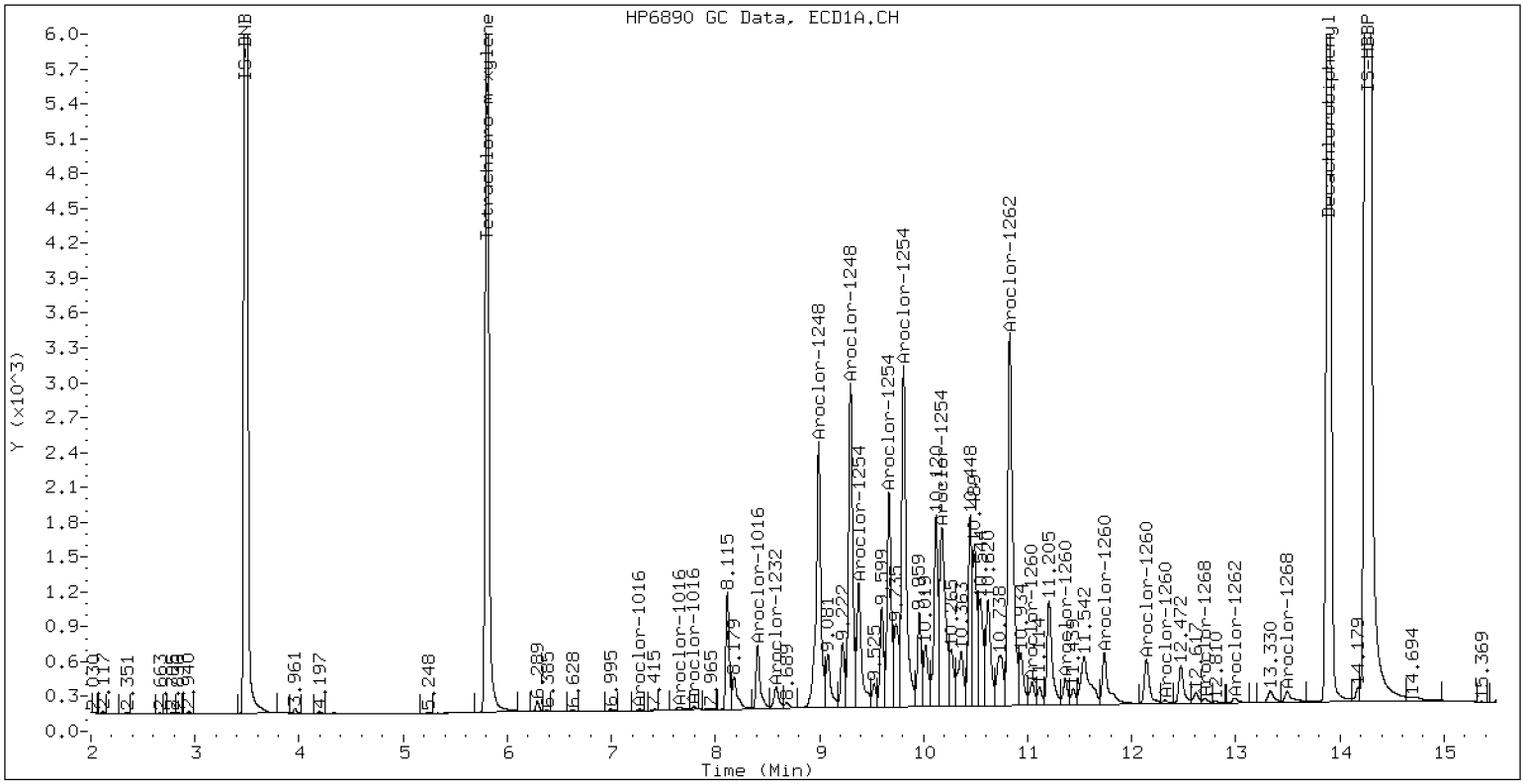
Total PCB Area Col2 (5.785 - 14.019) = 1007601 Col2 Total PCB = 0.3 ppm*

* Quantitated against AR1660 0.25ppm in Ical

PCB-Form 10 Mod.

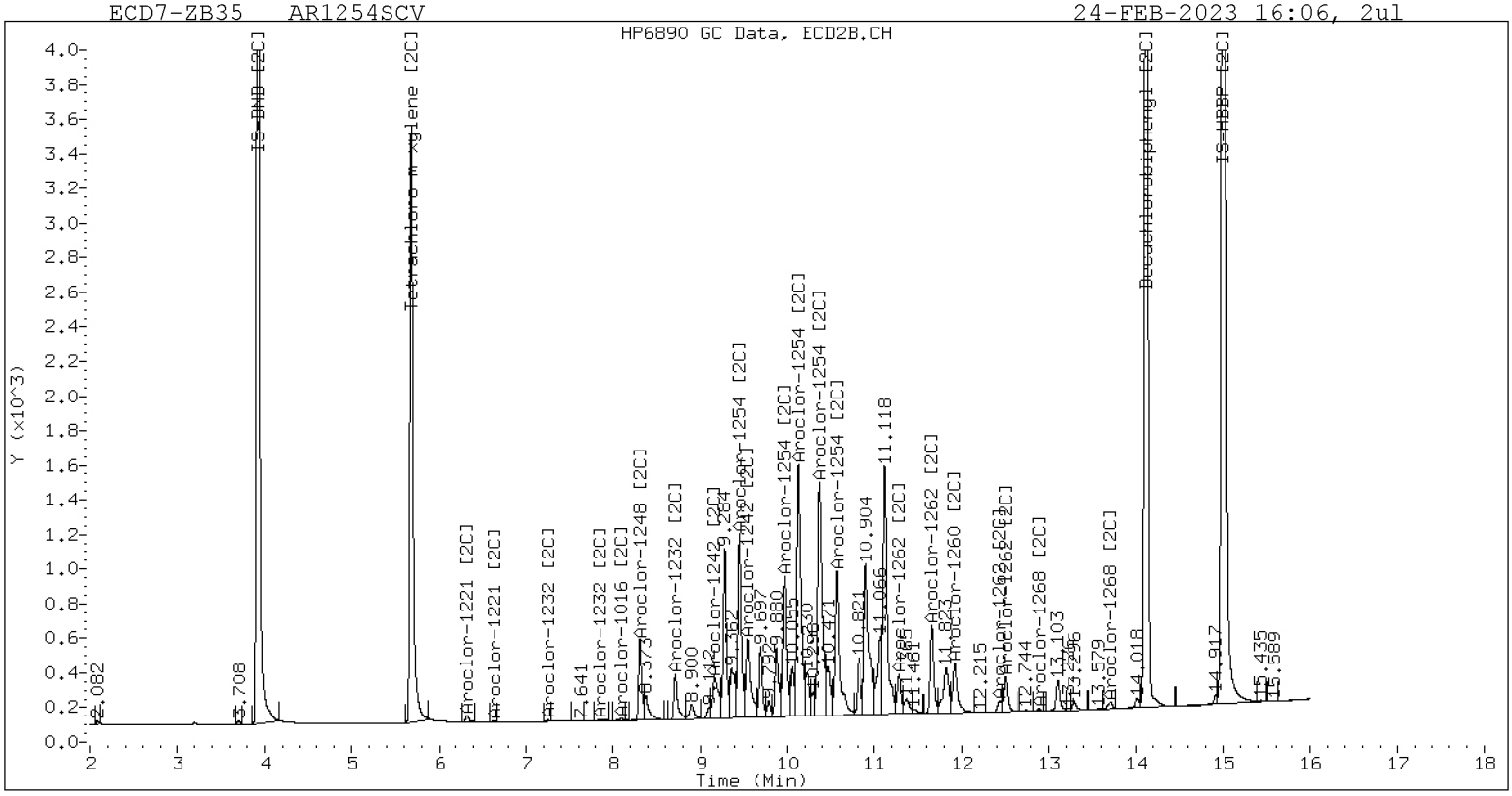
PCB Dual Column Chromatograms

ECD7-ZB5 AR1254SCV 24-FEB-2023 16:06, 2ul



ZB-5 Manual Integration: NO

ECD7-ZB35 AR1254SCV 24-FEB-2023 16:06, 2ul



ZB-35 Manual Integration: NO

Analytical Resources Inc.
Dual Column 608/8082 PCB Quantitation Report

Data file 1: /230224.b/02242317ECD7.D
Data file 2: /230224.b/230224.b/02242317ECD7.D
Method: \\target\share\chem4\ecd7.i\230224.b\PCB.m
Compound Sublist: PCB.sub
Instrument, Inj. Vol.: ecd7.i, 2ul
Quant Method: Internal Std

ARI ID: AR2162SCV
Client ID:
Injection Date: 24-FEB-2023 16:27
Report Date: 02/28/2023 09:51
Matrix: NONE
Dilution Factor: 1.0

SURROGATES

ZB5 Col RT	ZB5 Col Shift	ZB5 Col Response	ZB35 Col RT	ZB35 Col Shift	ZB35 Col Response	ZB5 on col	ZB35 on col	RPD	Compound/Flag
5.807	0.000	356001	5.685	0.000	170882	36.0	36.6	1.7	Tetrachloro-m-xylene
13.895	0.002	533971	14.119	0.000	326235	34.4	37.9	9.5	Decachlorobiphenyl

* Indicates RPD > 40%

INTERNAL STANDARD SUMMARY

Column 1

Standard Cpnd	Standard Area*	Sample Area	%D
Bromo-Nitrobenzene	673778	661953	-1.8
Hexabromobiphenyl	1429847	1574993	10.2

Column 2

Standard Cpnd	Standard Area*	Sample Area	%D
Bromo-Nitrobenzene	315256	317807	0.8
Hexabromobiphenyl	513946	565951	10.1

* Standard Areas taken from Initial Cal Level 3
Initial Calibration Date: 24-FEB-2023
<- Indicates standard response outside Limits (-50 to +100%)

	ZB5 Col					ZB35 Col				
Aroclor	Peak#	RT	Shift	Area	Amount	Peak#	RT	Shift	Area	Amount
Aroclor-1016	1	7.269	-0.001	7175	28.5	1	7.256	0.000	3727	20.0
Aroclor-1016	2	7.659	0.005	12893	16.8	2	7.863	0.007	5834	15.5
Aroclor-1016	3	7.794	0.004	6936	18.5	3	8.063	0.009	2963	17.4
Aroclor-1016	4	8.408	0.003	3610	14.9	4	8.308	0.002	2045	15.3
Total Col1Ave (4 peaks):					19.7	Total Col2Ave (4 peaks):				17.0 RPD = 14
Corrected Ave (3 peaks):					16.8	Corrected Ave (3 peaks):				16.1 RPD = 4
Aroclor-1221	1	4.730	-0.000	15803	266.6	1	4.955	-0.001	7909	262.9
Aroclor-1221	2	6.131	-0.001	26946	254.1	2	6.296	-0.000	14303	251.2
Aroclor-1221	3	6.382	-0.000	62477	253.8	3	6.622	0.000	23612	254.7
Total Col1Ave (3 peaks):					258.2	Total Col2Ave (3 peaks):				256.3 RPD = 1
Corrected Ave: < 3 Peaks						Corrected Ave: < 3 Peaks				
Aroclor-1232	1	4.730	0.000	15803	445.6	1	4.955	-0.001	7909	486.4
Aroclor-1232	2	6.131	0.000	26946	383.1	2	7.256	0.002	3727	46.1
Aroclor-1232	3	7.659	0.003	12893	40.5	3	7.863	0.002	5834	36.1
Aroclor-1232	4	8.583	0.003	2684	19.8	4	8.716	0.002	1189	25.6
Total Col1Ave (4 peaks):					222.3	Total Col2Ave (4 peaks):				148.5 RPD = 40
Corrected Ave (3 peaks):					147.8	Corrected Ave (3 peaks):				35.9 RPD = 122*
Aroclor-1242	1	7.269	-0.001	7175	35.0	1	7.256	0.000	3727	25.2
Aroclor-1242	2	7.659	0.003	12893	20.7	2	7.863	0.005	5834	18.8
Aroclor-1242	3	8.408	0.002	3610	18.6	3	9.175	0.008	1082	11.2
Aroclor-1242	4	8.583	0.004	2684	9.4	4	9.543	-0.054	1390	11.8
Total Col1Ave (4 peaks):					20.9	Total Col2Ave (4 peaks):				16.8 RPD = 22
Corrected Ave (3 peaks):					16.2	Corrected Ave (3 peaks):				13.9 RPD = 15
Aroclor-1248	1	8.408	0.002	3610	11.2	1	8.308	0.001	2045	13.5
Aroclor-1248	2	8.583	0.003	2684	6.5	2	8.716	0.002	1189	7.6
Aroclor-1248	3	8.994	-0.005	24440	31.6	3	9.175	0.009	1082	6.0
Aroclor-1248	4	9.302	0.008	26328	66.8	4	9.543	-0.048	1390	6.4
Total Col1Ave (4 peaks):					29.0	Total Col2Ave (4 peaks):				8.4 RPD = 110*
Corrected Ave (3 peaks):					16.4	Corrected Ave (3 peaks):				6.7 RPD = 85*
Aroclor-1254	1	9.302	0.004	26328	39.6	1	9.452	0.003	9571	39.6
Aroclor-1254	2	---			0.0	2	9.972	0.002	1733	8.9
Aroclor-1254	3	9.670	0.002	3721	8.7	3	10.147	0.023	49218	117.1
Aroclor-1254	4	9.808	0.000	9653	11.6	4	10.370	-0.002	59603	145.4
Aroclor-1254	5	10.120	-0.056	131179	251.9	5	10.569	0.001	79533	318.7
Total Col1Ave (4 peaks):					78.0	Total Col2Ave (5 peaks):				125.9 RPD = 47*
Corrected Ave (3 peaks):					20.0	Corrected Ave (4 peaks):				77.8 RPD = 118*
Aroclor-1260	1	11.044	-0.000	223208	394.0	1	11.652	-0.001	104071	312.7
Aroclor-1260	2	11.361	-0.001	190166	321.2	2	11.919	0.002	251579	296.2
Aroclor-1260	3	11.737	0.003	458281	291.9	3	12.435	-0.001	113645	504.2
Aroclor-1260	4	12.141	0.002	149720	189.4	4	12.501	-0.001	182951	319.6
Aroclor-1260	5	12.244	0.000	196033	576.0	NS	---			----
Total Col1Ave (5 peaks):					354.5	Total Col2Ave (4 peaks):				358.2 RPD = 1
Corrected Ave (4 peaks):					299.1	Corrected Ave (3 peaks):				309.5 RPD = 3
Aroclor-1262	1	10.828	-0.001	121431	251.3	1	11.201	0.000	121335	251.1
Aroclor-1262	2	12.244	0.000	196033	249.3	2	11.652	0.000	104071	252.9
Aroclor-1262	3	12.319	0.001	211092	249.8	3	12.435	0.001	113645	243.4
Aroclor-1262	4	12.988	0.001	183455	237.5	4	12.501	-0.001	182951	250.1
Total Col1Ave (4 peaks):					247.0	Total Col2Ave (4 peaks):				249.3 RPD = 1
Corrected Ave (3 peaks):					245.5	Corrected Ave (3 peaks):				248.2 RPD = 1
Aroclor-1268	1	12.244	-0.002	196033	97.1	1	12.435	0.003	113645	99.7
Aroclor-1268	2	12.319	0.002	211092	105.6	2	12.501	0.001	182951	149.3
Aroclor-1268	3	12.723	0.024	77240	45.2	3	12.891	-0.000	7755	7.4
Aroclor-1268	4	13.488	-0.002	65479	11.6	4	13.709	0.000	35146	10.5
Total Col1Ave (4 peaks):					64.9	Total Col2Ave (4 peaks):				66.7 RPD = 3

Corrected Ave (3 peaks): 51.3 Corrected Ave (3 peaks): 39.2 RPD = 27

Total PCB Area Col1 (5.906 - 13.793) = 3239932 Col1 Total PCB = 0.4 ppm*

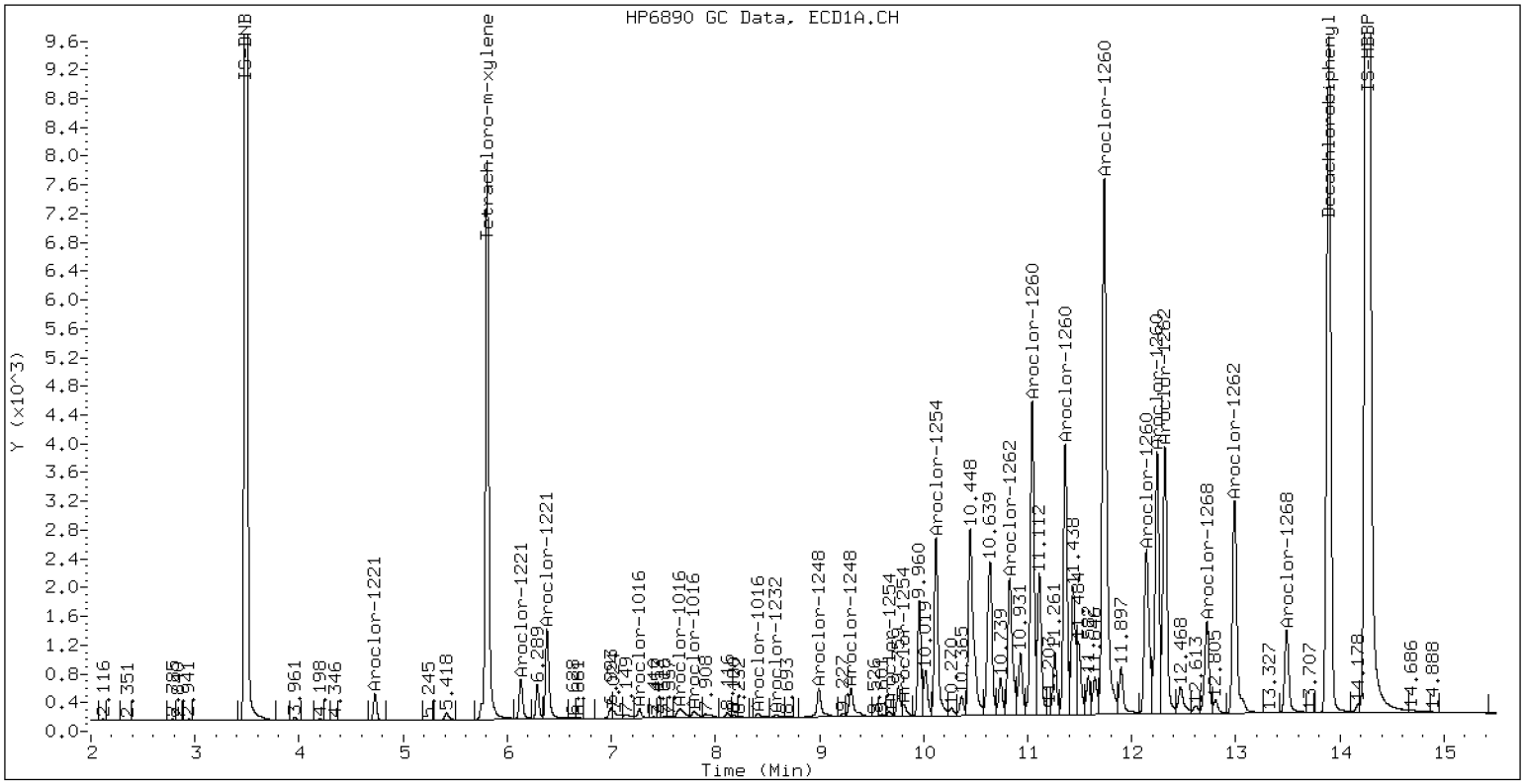
Total PCB Area Col2 (5.785 - 14.019) = 1655522 Col2 Total PCB = 0.4 ppm*

* Quantitated against AR1660 0.25ppm in Ical

PCB-Form 10 Mod.

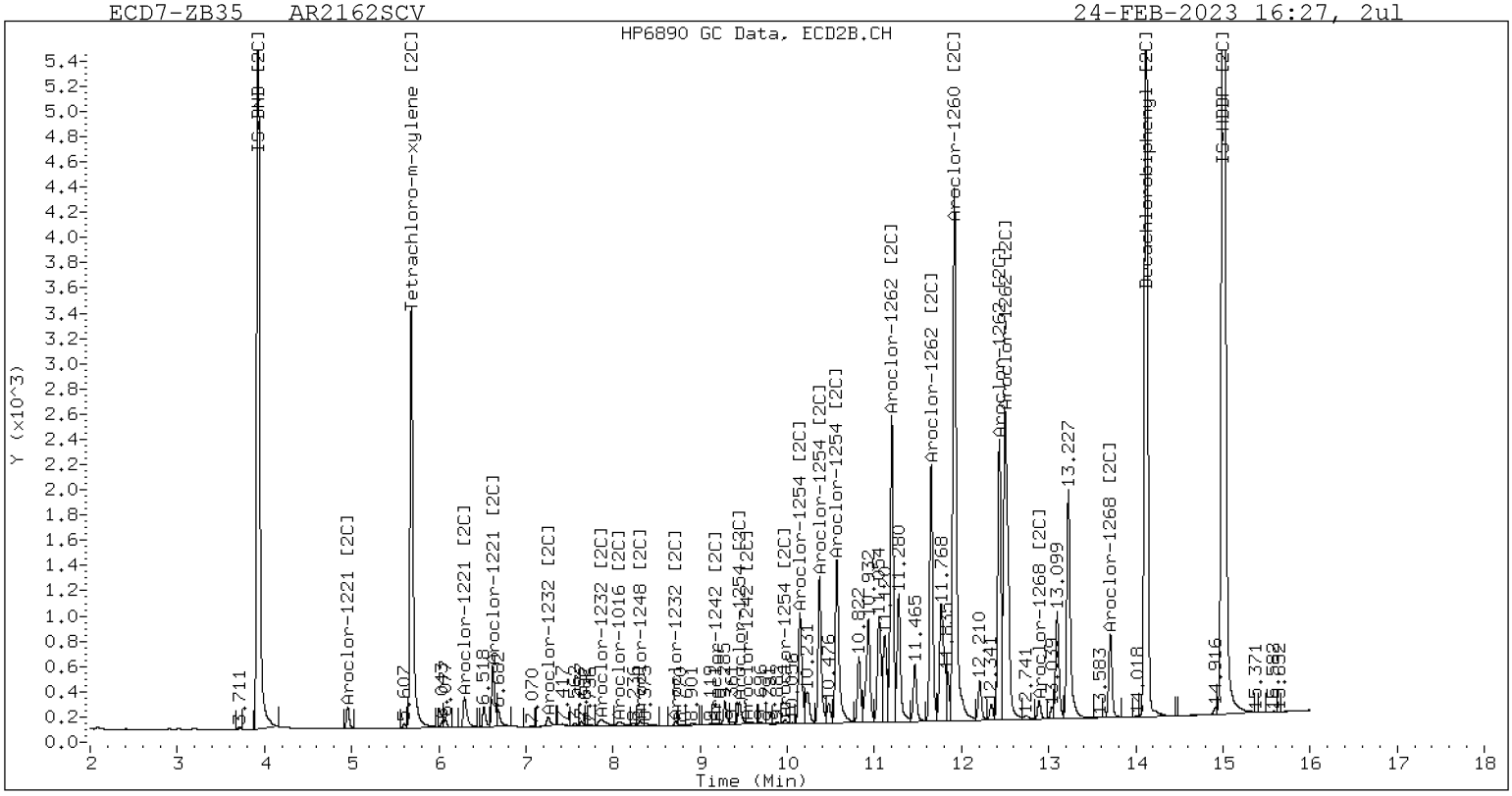
PCB Dual Column Chromatograms

ECD7-ZB5 AR2162SCV 24-FEB-2023 16:27, 2ul



ZB-5 Manual Integration: NO

ECD7-ZB35 AR2162SCV 24-FEB-2023 16:27, 2ul



ZB-35 Manual Integration: NO

Analytical Resources Inc.
Dual Column 608/8082 PCB Quantitation Report

Data file 1: /230224.b/02242318ECD7.D
Data file 2: /230224.b/230224.b/02242318ECD7.D
Method: \\target\share\chem4\ecd7.i\230224.b\PCB.m
Compound Sublist: PCB.sub
Instrument, Inj. Vol.: ecd7.i, 2ul
Quant Method: Internal Std

ARI ID: AR3268SCV
Client ID:
Injection Date: 24-FEB-2023 16:48
Report Date: 02/28/2023 09:51
Matrix: NONE
Dilution Factor: 1.0

SURROGATES

ZB5 Col RT	ZB5 Col Shift	ZB5 Col Response	ZB35 Col RT	ZB35 Col Shift	ZB35 Col Response	ZB5 on col	ZB35 on col	RPD	Compound/Flag
5.806	0.000	363331	5.685	0.000	176204	37.1	38.2	2.9	Tetrachloro-m-xylene
13.894	0.001	800845	14.118	-0.001	488290	51.3	56.4	9.5	Decachlorobiphenyl

* Indicates RPD > 40%

INTERNAL STANDARD SUMMARY

Column 1

Standard Cpnd	Standard Area*	Sample Area	%D
Bromo-Nitrobenzene	673778	656592	-2.6
Hexabromobiphenyl	1429847	1584453	10.8

Column 2

Standard Cpnd	Standard Area*	Sample Area	%D
Bromo-Nitrobenzene	315256	314741	-0.2
Hexabromobiphenyl	513946	568346	10.6

* Standard Areas taken from Initial Cal Level 3
Initial Calibration Date: 24-FEB-2023
<- Indicates standard response outside Limits (-50 to +100%)

	ZB5 Col					ZB35 Col				
Aroclor	Peak#	RT	Shift	Area	Amount	Peak#	RT	Shift	Area	Amount
Aroclor-1016	1	7.270	-0.001	28327	113.6	1	7.254	-0.001	20651	112.1
Aroclor-1016	2	7.657	0.003	80668	106.1	2	7.861	0.005	41326	110.6
Aroclor-1016	3	7.793	0.003	40661	109.6	3	8.060	0.005	20446	121.2
Aroclor-1016	4	8.407	0.002	24680	102.9	4	8.308	0.001	13576	102.5
Total Col1Ave (4 peaks):				108.0		Total Col2Ave (4 peaks):			111.6	RPD = 3
Corrected Ave (3 peaks):				106.2		Corrected Ave (3 peaks):			108.4	RPD = 2
Aroclor-1221	1	4.729	-0.001	8535	145.1	1	4.956	-0.000	3965	133.1
Aroclor-1221	2	6.132	-0.000	15523	147.6	2	6.297	0.001	8689	154.1
Aroclor-1221	3	6.382	-0.000	45872	187.9	3	6.622	0.001	22272	242.6
Total Col1Ave (3 peaks):				160.2		Total Col2Ave (3 peaks):			176.6	RPD = 10
Corrected Ave: < 3 Peaks						Corrected Ave: < 3 Peaks				
Aroclor-1232	1	4.729	-0.001	8535	242.6	1	4.956	0.000	3965	246.2
Aroclor-1232	2	6.132	0.001	15523	222.5	2	7.254	0.000	20651	258.1
Aroclor-1232	3	7.657	0.001	80668	255.4	3	7.861	0.001	41326	258.3
Aroclor-1232	4	8.582	0.001	34784	259.2	4	8.714	-0.001	12504	271.5
Total Col1Ave (4 peaks):				244.9		Total Col2Ave (4 peaks):			258.5	RPD = 5
Corrected Ave (3 peaks):				240.2		Corrected Ave (3 peaks):			254.2	RPD = 6
Aroclor-1242	1	7.270	-0.001	28327	139.2	1	7.254	-0.001	20651	141.2
Aroclor-1242	2	7.657	0.001	80668	130.5	2	7.861	0.003	41326	134.4
Aroclor-1242	3	8.407	0.001	24680	128.4	3	9.170	0.003	12830	134.1
Aroclor-1242	4	8.582	0.003	34784	122.4	4	9.600	0.003	14836	127.3
Total Col1Ave (4 peaks):				130.1		Total Col2Ave (4 peaks):			134.3	RPD = 3
Corrected Ave (3 peaks):				127.1		Corrected Ave (3 peaks):			132.0	RPD = 4
Aroclor-1248	1	8.407	0.001	24680	77.0	1	8.308	0.000	13576	90.3
Aroclor-1248	2	8.582	0.001	34784	85.4	2	8.714	-0.000	12504	80.5
Aroclor-1248	3	8.996	-0.003	83592	108.8	3	9.170	0.004	12830	71.8
Aroclor-1248	4	9.292	-0.003	39603	101.3	4	9.600	0.010	14836	69.1
Total Col1Ave (4 peaks):				93.1		Total Col2Ave (4 peaks):			77.9	RPD = 18
Corrected Ave (3 peaks):				87.9		Corrected Ave (3 peaks):			73.8	RPD = 17
Aroclor-1254	1	9.292	-0.007	39603	60.1	1	9.452	0.003	4590	19.2
Aroclor-1254	2	9.377	-0.000	11450	38.6	2	9.973	0.003	2892	15.0
Aroclor-1254	3	9.674	0.005	6387	15.1	3	10.131	0.007	6052	14.5
Aroclor-1254	4	9.813	0.006	10162	12.3	4	10.390	0.017	5324	13.1
Aroclor-1254	5	10.189	0.012	6862	13.3	5	10.572	0.004	1891	7.7
Total Col1Ave (5 peaks):				27.9		Total Col2Ave (5 peaks):			13.9	RPD = 67*
Corrected Ave (4 peaks):				19.8		Corrected Ave (4 peaks):			12.6	RPD = 45*
Aroclor-1260	1	11.046	0.002	87033	152.7	1	11.645	-0.008	62543	187.1
Aroclor-1260	2	11.362	0.001	6300	10.6	2	11.920	0.003	28552	33.5
Aroclor-1260	3	11.738	0.004	54524	34.5	3	12.432	-0.004	285450	1261.2
Aroclor-1260	4	12.144	0.005	1727	2.2	4	12.499	-0.002	306992	534.0
Aroclor-1260	5	12.246	0.002	502931	1469.0	NS	---			----
Total Col1Ave (5 peaks):				333.8		Total Col2Ave (4 peaks):			503.9	RPD = 41*
Corrected Ave (4 peaks):				50.0		Corrected Ave (3 peaks):			251.5	RPD = 134*
Aroclor-1262	1	10.832	0.004	3395	7.0	1	11.201	0.001	44255	91.2
Aroclor-1262	2	12.246	0.002	502931	635.9	2	11.645	-0.007	62543	151.3
Aroclor-1262	3	12.318	-0.000	497006	584.5	3	12.432	-0.002	285450	608.7
Aroclor-1262	4	12.987	-0.000	202197	260.2	4	12.499	-0.003	306992	417.9
Total Col1Ave (4 peaks):				371.9		Total Col2Ave (4 peaks):			317.3	RPD = 16
Corrected Ave (3 peaks):				283.9		Corrected Ave (3 peaks):			220.1	RPD = 25
Aroclor-1268	1	12.246	-0.001	502931	247.7	1	12.432	-0.000	285450	249.4
Aroclor-1268	2	12.318	0.002	497006	247.2	2	12.499	-0.001	306992	249.5
Aroclor-1268	3	12.699	-0.000	422793	245.8	3	12.892	0.000	260893	248.4
Aroclor-1268	4	13.490	0.000	1386953	244.9	4	13.709	-0.000	829733	247.1
Total Col1Ave (4 peaks):				246.4		Total Col2Ave (4 peaks):			248.6	RPD = 1

Corrected Ave (3 peaks): 246.0 Corrected Ave (3 peaks): 248.3 RPD = 1

Total PCB Area Col1 (5.906 - 13.793) = 4180607 Col1 Total PCB = 0.5 ppm*

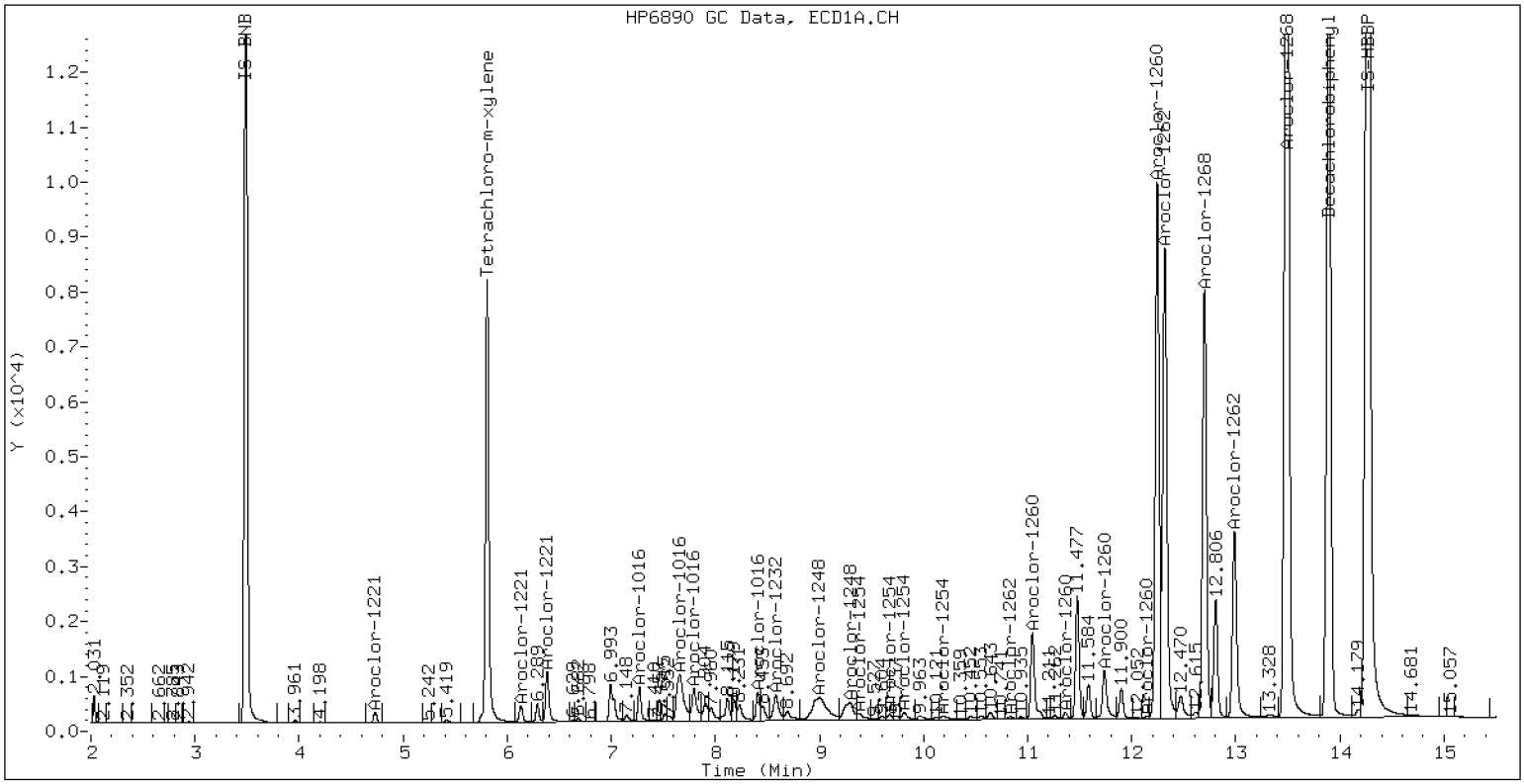
Total PCB Area Col2 (5.785 - 14.019) = 2376912 Col2 Total PCB = 0.6 ppm*

* Quantitated against AR1660 0.25ppm in Ical

PCB-Form 10 Mod.

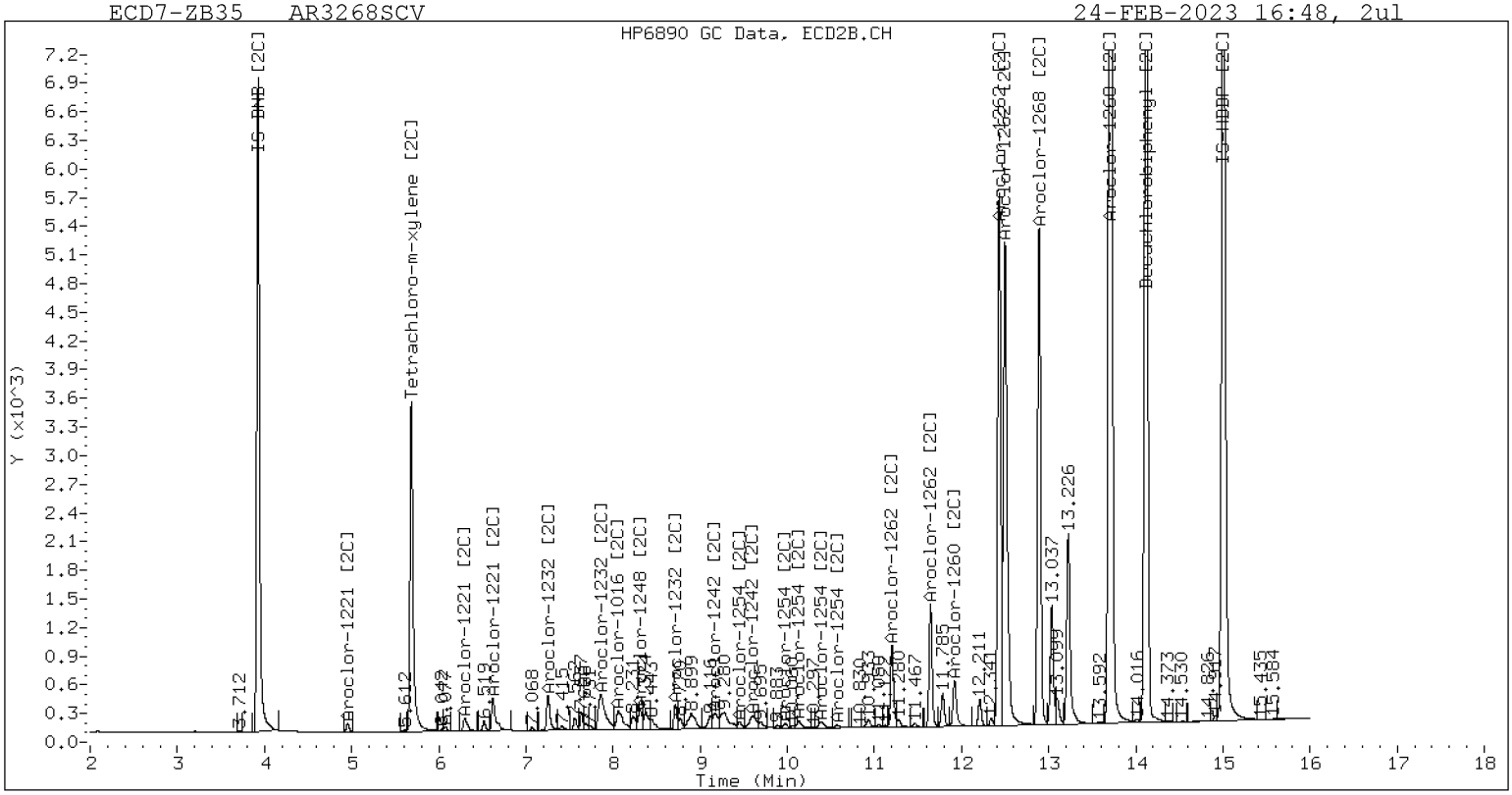
PCB Dual Column Chromatograms

ECD7-ZB5 AR3268SCV 24-FEB-2023 16:48, 2ul



ZB-5 Manual Integration: NO

ECD7-ZB35 AR3268SCV 24-FEB-2023 16:48, 2ul



ZB-35 Manual Integration: NO

Analytical Resources Inc.
8082 DDT SCREEN REPORT

Data file 1: /230224.b/02242319ECD7.D ARI ID: DDTS

ZB5 Col RT	ZB5 Col Shift	ZB5 Col Response	ZB35 Col RT	ZB35 Col Shift	ZB35 Col Response	ZB5 on col	ZB35 on col	RPD	Compound/Flag
9.261	0.000	694353	9.912	0.000	580269	0.100	0.100	0.0	2,4-DDE
0.000	-10.293	0	10.672	0.000	673479	0.000	0.200#	----	2,4-DDT
9.686	0.000	1191406	10.212	0.000	433373	0.100	0.100	0.0	4,4-DDE
10.259	0.000	1721760	10.672	0.000	673479	0.100	0.200#	66.7*	4,4-DDD

# Indicates value is from co-eluting peaks
* Indicates RPD > 40%

Analytical Resources Inc.
8082 DDT SCREEN REPORT

Data file 1: /230224.b/02242320ECD7.D ARI ID: DDT BD

ZB5 Col RT	ZB5 Col Shift	ZB5 Col Response	ZB35 Col RT	ZB35 Col Shift	ZB35 Col Response	ZB5 on col	ZB35 on col	RPD	Compound/Flag
9.285	0.023	4923	9.921	0.009	9972	0.001	0.002	84.3*	2,4-DDE
0.000	-10.293	0	10.677	0.004	249094	0.000	0.074#	----	2,4-DDT
9.692	0.006	12128	10.221	0.009	528	0.001	0.000	156.7*	4,4-DDE
10.265	0.006	410017	10.677	0.004	249094	0.023	0.074#	103.6*	4,4-DDD

# Indicates value is from co-eluting peaks
* Indicates RPD > 40%

Analytical Resources, LLC
Analytical Chemists and Consultants

SECOND-SOURCE CALIBRATION VERIFICATION

EPA 8082A

Laboratory: Analytical Resources, LLC
Client: HydroGeoLogic, Inc.
Calibration: GB00069
Sequence: SLB0342

SDG: 23C0692
Project: Portland Harbor Superfund Site 2021-2023
Laboratory ID: SLB0342-SCV1
Sequence Name: AR1660SCV1
Standard ID: L002065

ANALYTE	EXPECTED (ug/L)	FOUND (ug/L)	% DRIFT	QC LIMIT
Aroclor 1016	250.00	243	-2.7	20.00
Aroclor 1016 [2C]	250.00	246	-1.4	20.00
Aroclor 1260	250.00	266	6.2	20.00
Aroclor 1260 [2C]	250.00	261	4.5	20.00
Decachlorobiphenyl	40.000	34.3	-14.2	20.00
Tetrachlorometaxylene	40.000	34.9	-12.6	20.00
Decachlorobiphenyl [2C]	40.000	37.3	-6.6	20.00
Tetrachlorometaxylene [2C]	40.000	35.8	-10.6	20.00

* Indicates values outside of QC limits
[2C] indicates second-column analyte.

Analytical Resources, LLC
Analytical Chemists and Consultants

SECOND-SOURCE CALIBRATION VERIFICATION

EPA 8082A

Laboratory: Analytical Resources, LLC
Client: HydroGeoLogic, Inc.
Calibration: GB00069
Sequence: SLB0342

SDG: 23C0692
Project: Portland Harbor Superfund Site 2021-2023
Laboratory ID: SLB0342-SCV2
Sequence Name: AR1242SCV2
Standard ID: K007656

ANALYTE	EXPECTED (ug/L)	FOUND (ug/L)	% DRIFT	QC LIMIT
Aroclor 1242	250.00	204	-18.5	20.00
Aroclor 1242 [2C]	250.00	221	-11.8	20.00
Decachlorobiphenyl	40.000	37.0	-7.5	20.00
Tetrachlorometaxylene	40.000	33.6	-15.9	20.00
Decachlorobiphenyl [2C]	40.000	40.3	0.8	20.00
Tetrachlorometaxylene [2C]	40.000	34.5	-13.7	20.00

* Indicates values outside of QC limits
[2C] indicates second-column analyte.

Analytical Resources, LLC
Analytical Chemists and Consultants

SECOND-SOURCE CALIBRATION VERIFICATION

EPA 8082A

Laboratory: Analytical Resources, LLC
Client: HydroGeoLogic, Inc.
Calibration: GB00069
Sequence: SLB0342

SDG: 23C0692
Project: Portland Harbor Superfund Site 2021-2023
Laboratory ID: SLB0342-SCV3
Sequence Name: AR1248SCV3
Standard ID: L002066

ANALYTE	EXPECTED (ug/L)	FOUND (ug/L)	% DRIFT	QC LIMIT
Aroclor 1248	250.00	249	-0.2	20.00
Aroclor 1248 [2C]	250.00	248	-0.8	20.00
Decachlorobiphenyl	40.000	33.1	-17.2	20.00
Tetrachlorometaxylene	40.000	34.9	-12.8	20.00
Decachlorobiphenyl [2C]	40.000	36.3	-9.2	20.00
Tetrachlorometaxylene [2C]	40.000	36.4	-9.0	20.00

* Indicates values outside of QC limits
[2C] indicates second-column analyte.

Analytical Resources, LLC
Analytical Chemists and Consultants

SECOND-SOURCE CALIBRATION VERIFICATION

EPA 8082A

Laboratory: Analytical Resources, LLC
Client: HydroGeoLogic, Inc.
Calibration: GB00069
Sequence: SLB0342

SDG: 23C0692
Project: Portland Harbor Superfund Site 2021-2023
Laboratory ID: SLB0342-SCV4
Sequence Name: AR1254SCV4
Standard ID: L002067

ANALYTE	EXPECTED (ug/L)	FOUND (ug/L)	% DRIFT	QC LIMIT
Aroclor 1254	250.00	235	-5.9	20.00
Aroclor 1254 [2C]	250.00	240	-4.0	20.00
Decachlorobiphenyl	40.000	34.6	-13.4	20.00
Tetrachlorometaxylene	40.000	36.1	-9.7	20.00
Decachlorobiphenyl [2C]	40.000	37.9	-5.2	20.00
Tetrachlorometaxylene [2C]	40.000	37.1	-7.3	20.00

* Indicates values outside of QC limits
[2C] indicates second-column analyte.

Analytical Resources, LLC
Analytical Chemists and Consultants

SECOND-SOURCE CALIBRATION VERIFICATION

EPA 8082A

Laboratory: Analytical Resources, LLC
Client: HydroGeoLogic, Inc.
Calibration: GB00069
Sequence: SLB0342

SDG: 23C0692
Project: Portland Harbor Superfund Site 2021-2023
Laboratory ID: SLB0342-SCV5
Sequence Name: AR2162SCV5
Standard ID: L002068

ANALYTE	EXPECTED (ug/L)	FOUND (ug/L)	% DRIFT	QC LIMIT
Aroclor 1221	250.00	258	3.3	20.00
Aroclor 1221 [2C]	250.00	256	2.5	20.00
Aroclor 1262	250.00	247	-1.2	20.00
Aroclor 1262 [2C]	250.00	249	-0.3	20.00
Decachlorobiphenyl	40.000	34.4	-13.9	20.00
Tetrachlorometaxylene	40.000	36.0	-10.0	20.00
Decachlorobiphenyl [2C]	40.000	37.9	-5.4	20.00
Tetrachlorometaxylene [2C]	40.000	36.6	-8.4	20.00

* Indicates values outside of QC limits
[2C] indicates second-column analyte.

Analytical Resources, LLC
Analytical Chemists and Consultants

SECOND-SOURCE CALIBRATION VERIFICATION

EPA 8082A

Laboratory: Analytical Resources, LLC
Client: HydroGeoLogic, Inc.
Calibration: GB00069
Sequence: SLB0342

SDG: 23C0692
Project: Portland Harbor Superfund Site 2021-2023
Laboratory ID: SLB0342-SCV6
Sequence Name: AR3268SCV6
Standard ID: L002069

ANALYTE	EXPECTED (ug/L)	FOUND (ug/L)	% DRIFT	QC LIMIT
Aroclor 1232	250.00	245	-2.0	20.00
Aroclor 1232 [2C]	250.00	259	3.4	20.00
Aroclor 1268	250.00	246	-1.4	20.00
Aroclor 1268 [2C]	250.00	249	-0.6	20.00
Decachlorobiphenyl	40.000	51.3	28.3	20.00
Tetrachlorometaxylene	40.000	37.1	-7.3	20.00
Decachlorobiphenyl [2C]	40.000	56.4	41.0	20.00
Tetrachlorometaxylene [2C]	40.000	38.2	-4.6	20.00

* Indicates values outside of QC limits
[2C] indicates second-column analyte.

Analytical Resources, LLC
Analytical Chemists and Consultants

INITIAL CALIBRATION CHECK
EPA 8082A

Laboratory:	Analytical Resources, LLC	SDG:	23C0692
Client:	HydroGeoLogic, Inc.	Project:	Portland Harbor Superfund Site 2021-2023
Instrument ID:	ECD7	Calibration:	GB00069
Lab File ID:	04062302ECD7.D	Calibration Date:	02/24/2023
Sequence:	SLD0092	Injection Date:	04/06/23
Lab Sample ID:	SLD0092-ICV1	Injection Time:	11:47
Sequence Name:	AR1254ICV1		

		CONC. (ug/L)		RESPONSE FACTOR			% DRIFT/DIFF	
COMPOUND	TYPE	STD	ICV	ICAL	ICV	MIN	ICV	LIMIT
Aroclor 1254	A	250.00	333	0.0662949	0.0887541		33.0	+/-20 *
Aroclor-1254 (1)	A	250.00	300	0.0803331	0.0964126			
Aroclor-1254 (2)	A	250.00	295	0.0361302	0.0425931			
Aroclor-1254 (3)	A	250.00	326	0.0516471	0.0674715			
Aroclor-1254 (4)	A	250.00	337	0.1004230	0.1353063			
Aroclor-1254 (5)	A	250.00	405	0.0629414	0.1019870			
Aroclor 1254 [2C]	A	250.00	275	0.0763106	0.0846780		9.8	+/-20
Aroclor-1254 (1) [2C]	A	250.00	262	0.0608052	0.0638165			
Aroclor-1254 (2) [2C]	A	250.00	257	0.0489162	0.0502207			
Aroclor-1254 (3) [2C]	A	250.00	260	0.1058376	0.1098652			
Aroclor-1254 (4) [2C]	A	250.00	311	0.1031750	0.1283268			
Aroclor-1254 (5) [2C]	A	250.00	283	0.0628191	0.0711605			
Decachlorobiphenyl	A	40.000	78.7	0.7878687	1.5496420		96.8	+/-20 *
Tetrachlorometaxylene	A	40.000	35.4	1.1944880	1.0556650		-11.5	+/-20
Decachlorobiphenyl [2C]	A	40.000	36.5	1.2182710	1.1121160		-8.8	+/-20
Tetrachlorometaxylene [2C]	A	40.000	38.9	1.1737210	1.1411760		-2.8	+/-20

* Values outside of QC limits

* Values outside of QC limits

Analytical Resources Inc.
Dual Column 608/8082 PCB Quantitation Report

Data file 1: /230406.b/04062302ECD7.D
Data file 2: /230406.b/230406.b/04062302ECD7.D
Method: \\target\share\chem4\ecd7.i\230406.b\PCB.m
Compound Sublist: AR1254.sub
Instrument, Inj. Vol.: ecd7.i, 2ul
Quant Method: Internal Std

ARI ID: AR1254ICV1
Client ID:
Injection Date: 06-APR-2023 11:47
Report Date: 04/06/2023 13:39
Matrix: NONE
Dilution Factor: 1.0

SURROGATES

ZB5 Col RT	ZB5 Col Shift	ZB5 Col Response	ZB35 Col RT	ZB35 Col Shift	ZB35 Col Response	ZB5 on col	ZB35 on col	RPD	Compound/Flag
5.814	0.003	1044055	5.695	0.000	193402	35.4	38.9	9.5	Tetrachloro-m-xylene
13.908	0.008	3024943	14.123	0.000	370944	78.7	36.5	73.2*	Decachlorobiphenyl

* Indicates RPD > 40%

INTERNAL STANDARD SUMMARY

Column 1

Standard Cpnd	Standard Area*	Sample Area	%D
Bromo-Nitrobenzene	673778	1978005	193.6 <-
Hexabromobiphenyl	1429847	3904055	173.0 <-

Column 2

Standard Cpnd	Standard Area*	Sample Area	%D
Bromo-Nitrobenzene	315256	338952	7.5
Hexabromobiphenyl	513946	667096	29.8

* Standard Areas taken from Initial Cal Level 3
Initial Calibration Date: 24-FEB-2023
<- Indicates standard response outside Limits (-50 to +100%)

	ZB5 Col				ZB35 Col				
Aroclor	Peak#	RT	Shift	Area	Amount	Peak#	RT	Shift	Area	Amount
Aroclor-1254	1	9.317	0.000	595952	300.0	1	9.467	0.000	67596	262.4
Aroclor-1254	2	9.399	0.000	263279	294.7	2	9.988	0.000	53195	256.7
Aroclor-1254	3	9.689	0.000	417059	326.6	3	10.146	0.000	116372	259.5
Aroclor-1254	4	9.830	0.000	836364	336.8	4	10.392	0.000	135927	310.9
Aroclor-1254	5	10.212	0.000	630409	405.1	5	10.585	0.000	75375	283.2

Total Col1Ave (5 peaks): 332.7 Total Col2Ave (5 peaks): 274.5 RPD = 19

Corrected Ave (4 peaks): 314.5 Corrected Ave (4 peaks): 265.4 RPD = 17

CalAmt %D: 33.1 CalAmt %D: 9.8

Total PCB Area Col1 (5.910 - 13.800) = 10090627 Col1 Total PCB = 0.4 ppm*

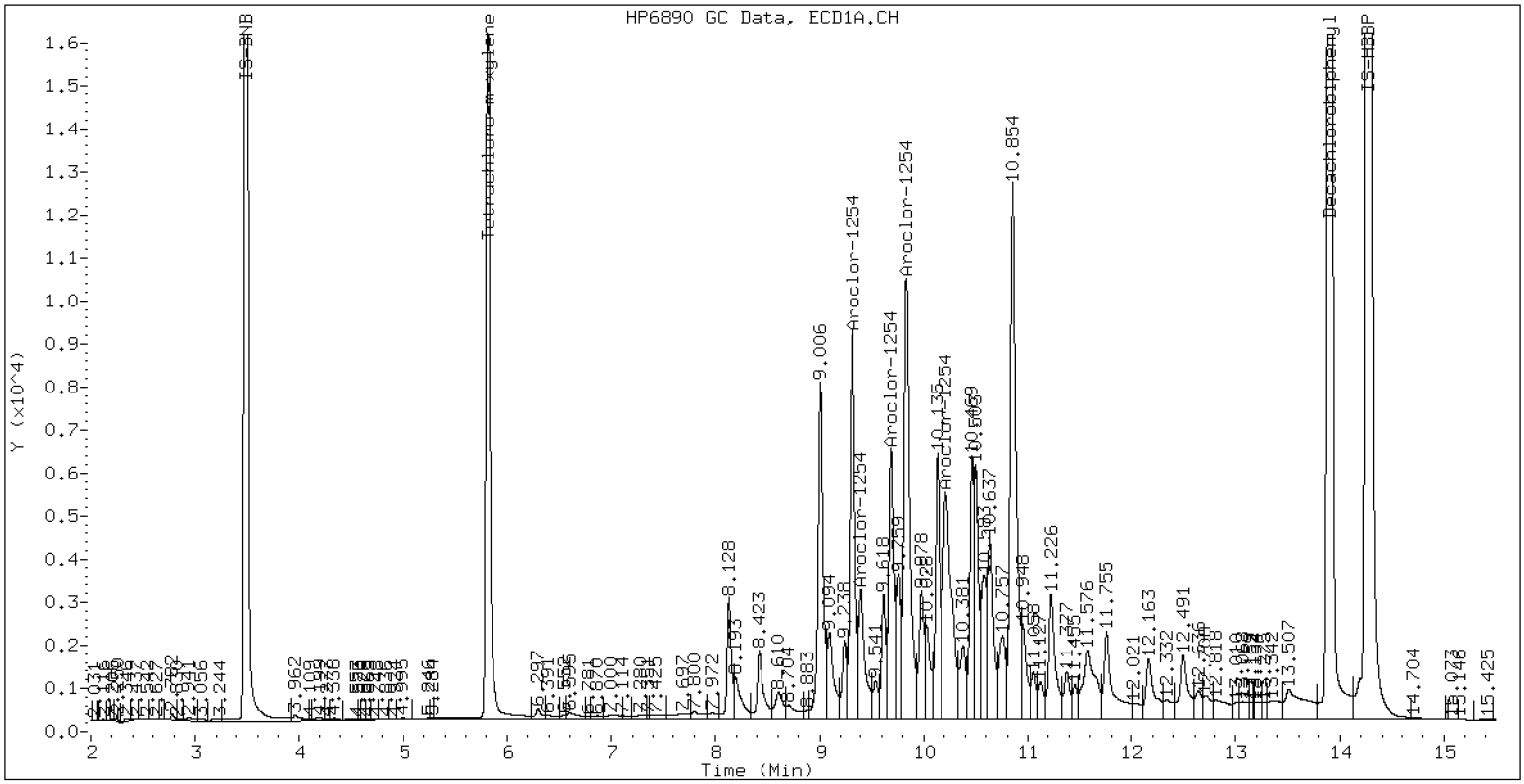
Total PCB Area Col2 (5.795 - 14.023) = 1159296 Col2 Total PCB = 0.3 ppm*

* Quantitated against AR1660 0.25ppm in Ical

PCB-Form 10 Mod.

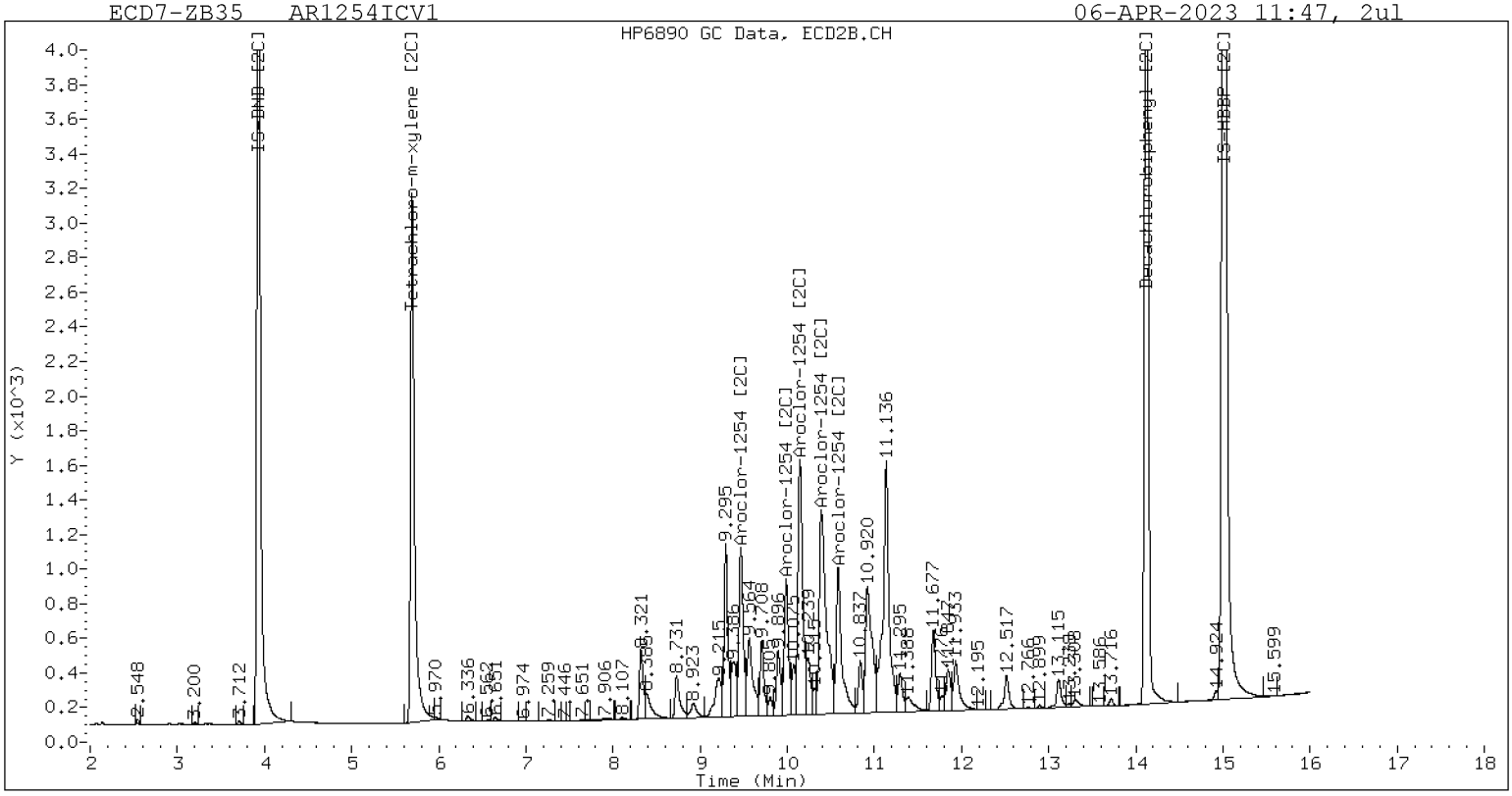
PCB Dual Column Chromatograms

ECD7-ZB5 AR1254ICV1 06-APR-2023 11:47, 2ul



ZB-5 Manual Integration: NO

ECD7-ZB35 AR1254ICV1 06-APR-2023 11:47, 2ul



ZB-35 Manual Integration: NO

Analytical Resources, LLC
Analytical Chemists and Consultants

INITIAL CALIBRATION CHECK
EPA 8082A

Laboratory:	Analytical Resources, LLC	SDG:	23C0692
Client:	HydroGeoLogic, Inc.	Project:	Portland Harbor Superfund Site 2021-2023
Instrument ID:	ECD7	Calibration:	GB00069
Lab File ID:	04062303ECD7.D	Calibration Date:	02/24/2023
Sequence:	SLD0092	Injection Date:	04/06/23
Lab Sample ID:	SLD0092-ICV2	Injection Time:	12:07
Sequence Name:	AR1660ICV2		

		CONC. (ug/L)		RESPONSE FACTOR			% DRIFT/DIFF	
COMPOUND	TYPE	STD	ICV	ICAL	ICV	MIN	ICV	LIMIT
Aroclor 1016	A	250.00	256	0.0493662	0.0500517		2.5	+/-20
Aroclor-1016 (1)	A	250.00	244	0.0303852	0.0297232		-2.4	
Aroclor-1016 (2)	A	250.00	236	0.0926308	0.0875221		-5.6	
Aroclor-1016 (3)	A	250.00	300	0.0452180	0.0543504		20.0	
Aroclor-1016 (4)	A	250.00	245	0.0292307	0.0286113		-2.0	
Aroclor 1016 [2C]	A	250.00	275	0.0545857	0.0587813		10.1	+/-20
Aroclor-1016 (1) [2C]	A	250.00	250	0.0468313	0.0467718		0.0	
Aroclor-1016 (2) [2C]	A	250.00	254	0.0949676	0.0963350		1.6	
Aroclor-1016 (3) [2C]	A	250.00	314	0.0428922	0.0538901		25.6	
Aroclor-1016 (4) [2C]	A	250.00	283	0.0336515	0.0381283		13.2	
Aroclor 1260	A	250.00	228	0.0392091	0.0356323		-9.0	+/-20
Aroclor-1260 (1)	A	250.00	238	0.0287785	0.0274021		-4.8	
Aroclor-1260 (2)	A	250.00	230	0.0300690	0.0276581		-8.0	
Aroclor-1260 (3)	A	250.00	236	0.0797517	0.0751706		-5.6	
Aroclor-1260 (4)	A	250.00	196	0.0401599	0.0315071		-21.6	
Aroclor-1260 (5)	A	250.00	238	0.0172866	0.0164234		-4.8	
Aroclor 1260 [2C]	A	250.00	212	0.0699688	0.0611158		-15.2	+/-20
Aroclor-1260 (1) [2C]	A	250.00	213	0.0470406	0.0400972		-14.8	
Aroclor-1260 (2) [2C]	A	250.00	224	0.1200523	0.1076858		-10.4	
Aroclor-1260 (3) [2C]	A	250.00	185	0.0318590	0.0236116		-26.0	
Aroclor-1260 (4) [2C]	A	250.00	226	0.0809231	0.0730685		-9.6	
Decachlorobiphenyl	A	40.000	35.7	0.7878687	0.7032750		-10.8	+/-20
Tetrachlorometaxylene	A	40.000	40.1	1.1944880	1.1975750		0.3	+/-20
Decachlorobiphenyl [2C]	A	40.000	37.7	1.2182710	1.1491120		-5.8	+/-20
Tetrachlorometaxylene [2C]	A	40.000	40.8	1.1737210	1.1976430		2.0	+/-20

* Values outside of QC limits

Analytical Resources Inc.
Dual Column 608/8082 PCB Quantitation Report

Data file 1: /230406.b/04062303ECD7.D
Data file 2: /230406.b/230406.b/04062303ECD7.D
Method: \\target\share\chem4\ecd7.i\230406.b\PCB.m
Compound Sublist: AR1660.sub
Instrument, Inj. Vol.: ecd7.i, 2ul
Quant Method: Internal Std

ARI ID: AR1660~~CCV~~ICV2
Client ID:
Injection Date: 06-APR-2023 12:07
Report Date: 04/06/2023 16:50
Matrix: NONE
Dilution Factor: 1.0

SURROGATES

ZB5 Col RT	Shift	Response	ZB35 Col RT	Shift	Response	ZB5 on col	ZB35 on col	RPD	Compound/Flag
5.810	0.000	346380	5.695	0.000	204025	40.1	40.8	1.8	Tetrachloro-m-xylene
13.900	0.000	569286	14.123	0.000	392516	35.7	37.7	5.5	Decachlorobiphenyl

* Indicates RPD > 40%

INTERNAL STANDARD SUMMARY

Column 1

Standard Cpnd	Standard Area*	Sample Area	%D
Bromo-Nitrobenzene	673778	578469	-14.1
Hexabromobiphenyl	1429847	1618957	13.2

Column 2

Standard Cpnd	Standard Area*	Sample Area	%D
Bromo-Nitrobenzene	315256	340711	8.1
Hexabromobiphenyl	513946	683164	32.9

* Standard Areas taken from Initial Cal Level 3
Initial Calibration Date: 24-FEB-2023
<- Indicates standard response outside Limits (-50 to +100%)

	ZB5 Col				ZB35 Col				
Aroclor	Peak#	RT	Shift	Area	Amount	Peak#	RT	Shift	Area	Amount
Aroclor-1016	1	7.275	0.000	53731	244.6	1	7.260	0.000	49799	249.7
Aroclor-1016	2	7.681	0.000	158215	236.2	2	7.888	0.000	102570	253.6
Aroclor-1016	3	7.806	0.000	98250	300.5	3	8.096	0.000	57378	314.1
Aroclor-1016	4	8.418	0.000	51721	244.7	4	8.321	0.000	40596	283.3

Total Col1Ave (4 peaks): 256.5 Total Col2Ave (4 peaks): 275.2 RPD = 7
Corrected Ave (3 peaks): 241.8 Corrected Ave (3 peaks): 262.2 RPD = 8

CalAmt %D: 2.6 CalAmt %D: 10.1

Aroclor-1260	1	11.056	0.000	138634	238.0	1	11.663	0.000	85603	213.1
Aroclor-1260	2	11.373	0.000	139929	230.0	2	11.932	0.000	229897	224.2
Aroclor-1260	3	11.751	0.000	380306	235.6	3	12.445	0.000	50408	185.3
Aroclor-1260	4	12.157	0.000	159402	196.1	4	12.515	0.000	155993	225.7
Aroclor-1260	5	12.254	0.000	83090	237.5	NS	---			----

Total Col1Ave (5 peaks): 227.5 Total Col2Ave (4 peaks): 212.1 RPD = 7
Corrected Ave (4 peaks): 224.8 Corrected Ave (3 peaks): 207.5 RPD = 8

CalAmt %D: -9.0 CalAmt %D: -15.2

Total PCB Area Col1 (5.910 - 13.800) = 3753548 Col1 Total PCB = 0.5 ppm*

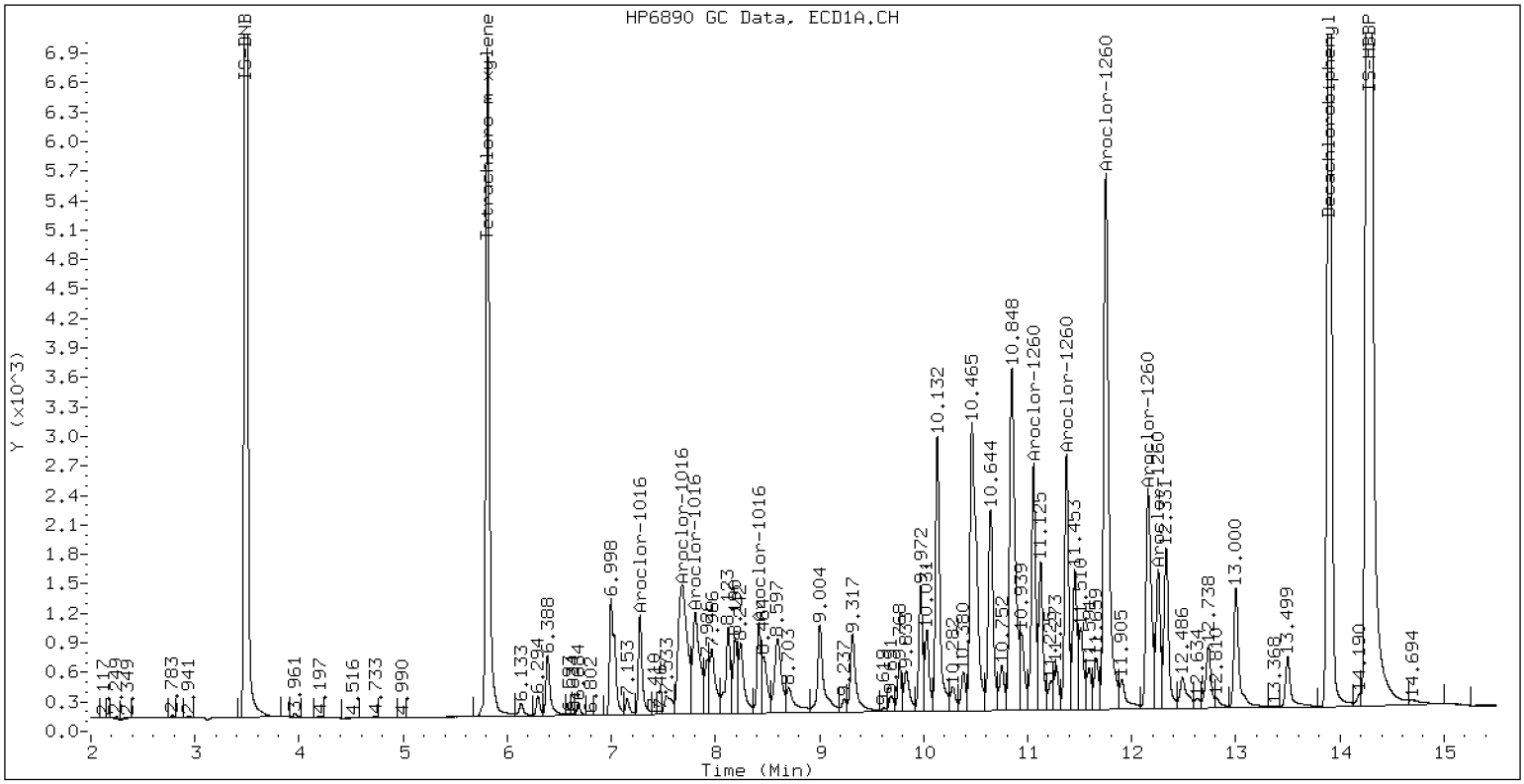
Total PCB Area Col2 (5.795 - 14.023) = 2094858 Col2 Total PCB = 0.5 ppm*

* Quantitated against AR1660 0.25ppm in Ical

PCB-Form 10 Mod.

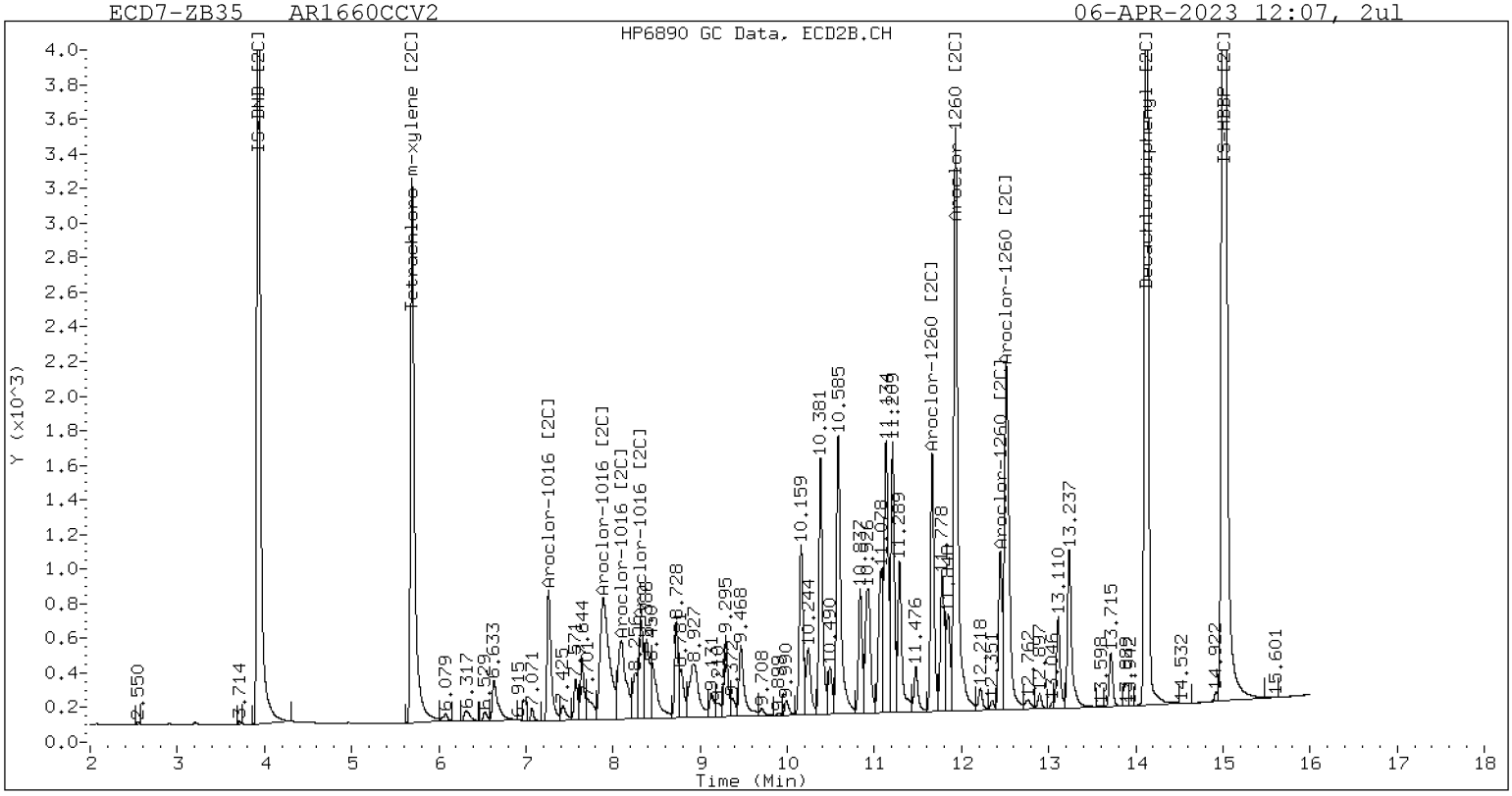
PCB Dual Column Chromatograms

ECD7-ZB5 AR1660CCV2 06-APR-2023 12:07, 2ul



ZB-5 Manual Integration: NO

ECD7-ZB35 AR1660CCV2 06-APR-2023 12:07, 2ul



ZB-35 Manual Integration: NO

Analytical Resources, LLC
Analytical Chemists and Consultants

SECOND-SOURCE
CONTINUING CALIBRATION CHECK
EPA 8082A

Laboratory:	Analytical Resources, LLC	SDG:	23C0692
Client:	HydroGeoLogic, Inc.	Project:	Portland Harbor Superfund Site 2021-2023
Instrument ID:	ECD7	Calibration:	GB00069
Lab File ID:	02242313ECD7.D	Calibration Date:	02/24/2023
Sequence:	SLB0342	Injection Date:	02/24/23
Lab Sample ID:	SLB0342-SCV1	Injection Time:	15:03
Sequence Name:	AR1660SCV1		

COMPOUND	TYPE	CONC. (ug/L)		RESPONSE FACTOR (RRF)			% DRIFT/DIFF	
		STD	CCV	ICAL	CCV	MIN	CCV	LIMIT
Aroclor 1016	A	250.00	243	0.0493662	0.0479314		-2.7	+/-20
Aroclor 1016 [2C]	A	250.00	246	0.0545857	0.0542382		-1.4	+/-20
Aroclor 1260	A	250.00	266	0.0392091	0.0412121		6.2	+/-20
Aroclor 1260 [2C]	A	250.00	261	0.0699688	0.0733659		4.5	+/-20
Decachlorobiphenyl	A	40.000	34.3	0.7878687	0.6762784		-14.2	+/-20
Tetrachlorometaxylene	A	40.000	34.9	1.1944880	1.0436010		-12.6	+/-20
Decachlorobiphenyl [2C]	A	40.000	37.3	1.2182710	1.1373730		-6.6	+/-20
Tetrachlorometaxylene [2C]	A	40.000	35.8	1.1737210	1.0492890		-10.6	+/-20

* Values outside of QC limits

* Values outside of QC limits

Analytical Resources, LLC
Analytical Chemists and Consultants

SECOND-SOURCE
CONTINUING CALIBRATION CHECK
EPA 8082A

Laboratory:	Analytical Resources, LLC	SDG:	23C0692
Client:	HydroGeoLogic, Inc.	Project:	Portland Harbor Superfund Site 2021-2023
Instrument ID:	ECD7	Calibration:	GB00069
Lab File ID:	02242314ECD7.D	Calibration Date:	02/24/2023
Sequence:	SLB0342	Injection Date:	02/24/23
Lab Sample ID:	SLB0342-SCV2	Injection Time:	15:24
Sequence Name:	AR1242SCV2		

COMPOUND	TYPE	CONC. (ug/L)		RESPONSE FACTOR (RRF)			% DRIFT/DIFF	
		STD	CCV	ICAL	CCV	MIN	CCV	LIMIT
Aroclor 1242	A	250.00	204	0.0395340	0.0322254		-18.5	+/-20
Aroclor 1242 [2C]	A	250.00	221	0.0423092	0.0365983		-11.8	+/-20
Decachlorobiphenyl	A	40.000	37.0	0.7878687	0.7290534		-7.5	+/-20
Tetrachlorometaxylene	A	40.000	33.6	1.1944880	1.0041320		-15.9	+/-20
Decachlorobiphenyl [2C]	A	40.000	40.3	1.2182710	1.2285170		0.8	+/-20
Tetrachlorometaxylene [2C]	A	40.000	34.5	1.1737210	1.0131510		-13.7	+/-20

* Values outside of QC limits

* Values outside of QC limits

Analytical Resources, LLC
Analytical Chemists and Consultants

SECOND-SOURCE
CONTINUING CALIBRATION CHECK
EPA 8082A

Laboratory:	Analytical Resources, LLC	SDG:	23C0692
Client:	HydroGeoLogic, Inc.	Project:	Portland Harbor Superfund Site 2021-2023
Instrument ID:	ECD7	Calibration:	GB00069
Lab File ID:	02242315ECD7.D	Calibration Date:	02/24/2023
Sequence:	SLB0342	Injection Date:	02/24/23
Lab Sample ID:	SLB0342-SCV3	Injection Time:	15:45
Sequence Name:	AR1248SCV3		

COMPOUND	TYPE	CONC. (ug/L)		RESPONSE FACTOR (RRF)			% DRIFT/DIFF	
		STD	CCV	ICAL	CCV	MIN	CCV	LIMIT
Aroclor 1248	A	250.00	249	0.0574755	0.0572474		-0.2	+/-20
Aroclor 1248 [2C]	A	250.00	248	0.0444270	0.0440936		-0.8	+/-20
Decachlorobiphenyl	A	40.000	33.1	0.7878687	0.6527336		-17.2	+/-20
Tetrachlorometaxylene	A	40.000	34.9	1.1944880	1.0413820		-12.8	+/-20
Decachlorobiphenyl [2C]	A	40.000	36.3	1.2182710	1.1066400		-9.2	+/-20
Tetrachlorometaxylene [2C]	A	40.000	36.4	1.1737210	1.0676190		-9.0	+/-20

* Values outside of QC limits

* Values outside of QC limits

Analytical Resources, LLC
Analytical Chemists and Consultants

SECOND-SOURCE
CONTINUING CALIBRATION CHECK
EPA 8082A

Laboratory:	Analytical Resources, LLC	SDG:	23C0692
Client:	HydroGeoLogic, Inc.	Project:	Portland Harbor Superfund Site 2021-2023
Instrument ID:	ECD7	Calibration:	GB00069
Lab File ID:	02242316ECD7.D	Calibration Date:	02/24/2023
Sequence:	SLB0342	Injection Date:	02/24/23
Lab Sample ID:	SLB0342-SCV4	Injection Time:	16:06
Sequence Name:	AR1254SCV4		

COMPOUND	TYPE	CONC. (ug/L)		RESPONSE FACTOR (RRF)			% DRIFT/DIFF	
		STD	CCV	ICAL	CCV	MIN	CCV	LIMIT
Aroclor 1254	A	250.00	235	0.0662949	0.0622529		-5.9	+/-20
Aroclor 1254 [2C]	A	250.00	240	0.0763106	0.0731447		-4.0	+/-20
Decachlorobiphenyl	A	40.000	34.6	0.7878687	0.6823832		-13.4	+/-20
Tetrachlorometaxylene	A	40.000	36.1	1.1944880	1.0787610		-9.7	+/-20
Decachlorobiphenyl [2C]	A	40.000	37.9	1.2182710	1.1548440		-5.2	+/-20
Tetrachlorometaxylene [2C]	A	40.000	37.1	1.1737210	1.0880920		-7.3	+/-20

* Values outside of QC limits

* Values outside of QC limits

Analytical Resources, LLC
Analytical Chemists and Consultants

SECOND-SOURCE
CONTINUING CALIBRATION CHECK
EPA 8082A

Laboratory:	Analytical Resources, LLC	SDG:	23C0692
Client:	HydroGeoLogic, Inc.	Project:	Portland Harbor Superfund Site 2021-2023
Instrument ID:	ECD7	Calibration:	GB00069
Lab File ID:	02242317ECD7.D	Calibration Date:	02/24/2023
Sequence:	SLB0342	Injection Date:	02/24/23
Lab Sample ID:	SLB0342-SCV5	Injection Time:	16:27
Sequence Name:	AR2162SCV5		

		CONC. (ug/L)		RESPONSE FACTOR (RRF)			% DRIFT/DIFF	
COMPOUND	TYPE	STD	CCV	ICAL	CCV	MIN	CCV	LIMIT
Aroclor 1221	A	250.00	258	0.0165758	0.0169561		3.3	+/-20
Aroclor 1221 [2C]	A	250.00	256	0.0150798	0.0153801		2.5	+/-20
Aroclor 1262	A	250.00	247	0.0366596	0.0361658		-1.2	+/-20
Aroclor 1262 [2C]	A	250.00	249	0.0739760	0.0737876		-0.3	+/-20
Decachlorobiphenyl	A	40.000	34.4	0.7878687	0.6780614		-13.9	+/-20
Tetrachlorometaxylene	A	40.000	36.0	1.1944880	1.0756080		-10.0	+/-20
Decachlorobiphenyl [2C]	A	40.000	37.9	1.2182710	1.1528740		-5.4	+/-20
Tetrachlorometaxylene [2C]	A	40.000	36.6	1.1737210	1.0753820		-8.4	+/-20

* Values outside of QC limits

* Values outside of QC limits

Analytical Resources, LLC
Analytical Chemists and Consultants

SECOND-SOURCE
CONTINUING CALIBRATION CHECK
EPA 8082A

Laboratory:	Analytical Resources, LLC	SDG:	23C0692
Client:	HydroGeoLogic, Inc.	Project:	Portland Harbor Superfund Site 2021-2023
Instrument ID:	ECD7	Calibration:	GB00069
Lab File ID:	02242318ECD7.D	Calibration Date:	02/24/2023
Sequence:	SLB0342	Injection Date:	02/24/23
Lab Sample ID:	SLB0342-SCV6	Injection Time:	16:48
Sequence Name:	AR3268SCV6		

		CONC. (ug/L)		RESPONSE FACTOR (RRF)			% DRIFT/DIFF	
COMPOUND	TYPE	STD	CCV	ICAL	CCV	MIN	CCV	LIMIT
Aroclor 1232	A	250.00	245	0.0169039	0.0169981		-2.0	+/-20
Aroclor 1232 [2C]	A	250.00	259	0.0192023	0.0199392		3.4	+/-20
Aroclor 1268	A	250.00	246	0.1442124	0.1418626		-1.4	+/-20
Aroclor 1268 [2C]	A	250.00	249	0.2386862	0.2369075		-0.6	+/-20
Decachlorobiphenyl	A	40.000	51.3	0.7878687	1.0108790		28.3	+/-20
Tetrachlorometaxylene	A	40.000	37.1	1.1944880	1.1067180		-7.3	+/-20
Decachlorobiphenyl [2C]	A	40.000	56.4	1.2182710	1.7182840		41.0	+/-20
Tetrachlorometaxylene [2C]	A	40.000	38.2	1.1737210	1.1196760		-4.6	+/-20

* Values outside of QC limits

Analytical Resources, LLC
Analytical Chemists and Consultants

CONTINUING CALIBRATION CHECK
EPA 8082A

Laboratory:	Analytical Resources, LLC	SDG:	23C0692
Client:	HydroGeoLogic, Inc.	Project:	Portland Harbor Superfund Site 2021-2023
Instrument ID:	ECD7	Calibration:	GB00069
Lab File ID:	04062314ECD7.D	Calibration Date:	02/24/2023
Sequence:	SLD0092	Injection Date:	04/06/23
Lab Sample ID:	SLD0092-CCV1	Injection Time:	15:56
Sequence Name:	AR1248CCV1		

COMPOUND	TYPE	CONC. (ug/L)		RESPONSE FACTOR (RRF)			% DRIFT/DIFF	
		STD	CCV	ICAL	CCV	MIN	CCV	LIMIT
Aroclor 1248	A	250.00	303	0.0574755	0.0734026		21.1	+/-20 *
Aroclor-1248 (1)	A	250.00	228		0.0355472			
Aroclor-1248 (2)	A	250.00	241		0.0479136			
Aroclor-1248 (3)	A	250.00	374		0.1399735			
Aroclor-1248 (4)	A	250.00	368		0.0701761			
Aroclor 1248 [2C]	A	250.00	252	0.0444270	0.0444958		0.8	+/-20
Aroclor-1248 (1) [2C]	A	250.00	281		0.0429770			
Aroclor-1248 (2) [2C]	A	250.00	240		0.0379146			
Aroclor-1248 (3) [2C]	A	250.00	250		0.0454102			
Aroclor-1248 (4) [2C]	A	250.00	237		0.0516813			
Decachlorobiphenyl	A	40.000	35.5	0.7878687	0.6986967		-11.3	+/-20
Tetrachlorometaxylene	A	40.000	37.6	1.1944880	1.1214990		-6.0	+/-20
Decachlorobiphenyl [2C]	A	40.000	35.8	1.2182710	1.0912900		-10.5	+/-20
Tetrachlorometaxylene [2C]	A	40.000	39.6	1.1737210	1.1629800		-1.0	+/-20

* Values outside of QC limits

* Values outside of QC limits

Analytical Resources Inc.
Dual Column 608/8082 PCB Quantitation Report

Data file 1: /230406.b/04062314ECD7.D
Data file 2: /230406.b/230406.b/04062314ECD7.D
Method: \\target\share\chem4\ecd7.i\230406.b\PCB.m
Compound Sublist: AR1248.sub
Instrument, Inj. Vol.: ecd7.i, 2ul
Quant Method: Internal Std

ARI ID: AR1248CCV1
Client ID:
Injection Date: 06-APR-2023 15:56
Report Date: 04/06/2023 16:16
Matrix: NONE
Dilution Factor: 1.0

SURROGATES

ZB5 Col RT	Shift	Response	ZB35 Col RT	Shift	Response	ZB5 on col	ZB35 on col	RPD	Compound/Flag
5.810	-0.000	316556	5.694	-0.000	187973	37.6	39.6	5.4	Tetrachloro-m-xylene
13.899	-0.000	292210	14.123	0.000	275248	35.5	35.8	1.0	Decachlorobiphenyl

* Indicates RPD > 40%

INTERNAL STANDARD SUMMARY

Column 1

Standard Cpnd	Standard Area*	Sample Area	%D
Bromo-Nitrobenzene	673778	564523	-16.2
Hexabromobiphenyl	1429847	836443	-41.5

Column 2

Standard Cpnd	Standard Area*	Sample Area	%D
Bromo-Nitrobenzene	315256	323261	2.5
Hexabromobiphenyl	513946	504445	-1.8

* Standard Areas taken from Initial Cal Level 3
Initial Calibration Date: 24-FEB-2023
<- Indicates standard response outside Limits (-50 to +100%)

	ZB5 Col					ZB35 Col				
Aroclor	Peak#	RT	Shift	Area	Amount	Peak#	RT	Shift	Area	Amount
Aroclor-1248	1	8.418	0.012	62710	227.7	1	8.321	0.013	43415	281.3
Aroclor-1248	2	8.598	0.017	84526	241.4	2	8.727	0.012	38301	240.0
Aroclor-1248	3	8.999	0.001	246932	373.9	3	9.200	0.034	45873	249.8
Aroclor-1248	4	9.307	0.013	123800	368.2	4	9.626	0.036	52208	236.8

Total Col1Ave (4 peaks): 302.8 Total Col2Ave (4 peaks): 252.0 RPD = 18

Corrected Ave (3 peaks): 279.1 Corrected Ave (3 peaks): 242.2 RPD = 14

CalAmt %D: 21.1 CalAmt %D: 0.8

Total PCB Area Col1 (5.910 - 13.800) = 1332211 Col1 Total PCB = 0.2 ppm*

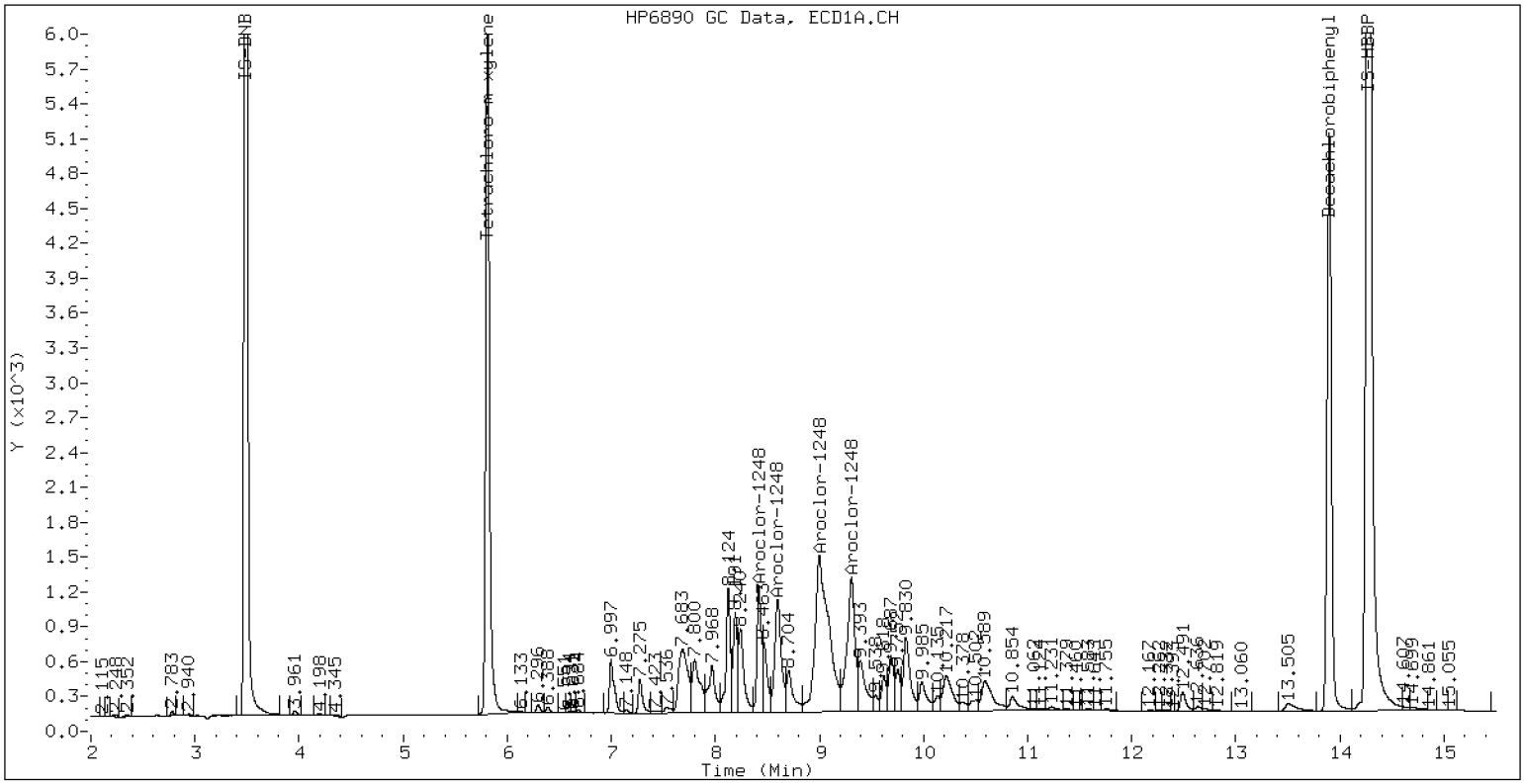
Total PCB Area Col2 (5.795 - 14.023) = 770282 Col2 Total PCB = 0.2 ppm*

* Quantitated against AR1660 0.25ppm in Ical

PCB-Form 10 Mod.

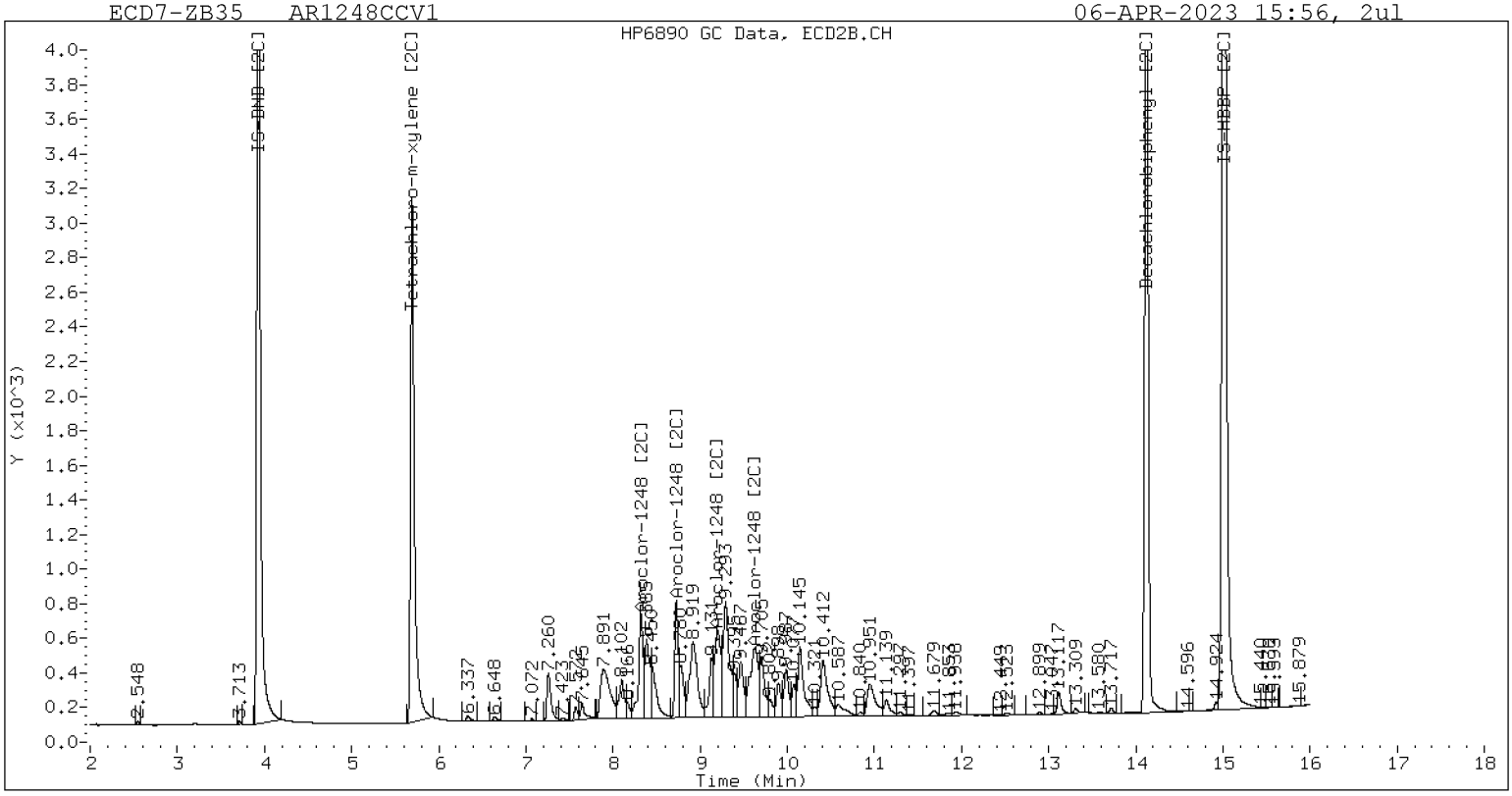
PCB Dual Column Chromatograms

ECD7-ZB5 AR1248CCV1 06-APR-2023 15:56, 2ul



ZB-5 Manual Integration: NO

ECD7-ZB35 AR1248CCV1 06-APR-2023 15:56, 2ul



ZB-35 Manual Integration: NO

Analytical Resources, LLC
Analytical Chemists and Consultants

CONTINUING CALIBRATION CHECK
EPA 8082A

Laboratory:	Analytical Resources, LLC	SDG:	23C0692
Client:	HydroGeoLogic, Inc.	Project:	Portland Harbor Superfund Site 2021-2023
Instrument ID:	ECD7	Calibration:	GB00069
Lab File ID:	04062315ECD7.D	Calibration Date:	02/24/2023
Sequence:	SLD0092	Injection Date:	04/06/23
Lab Sample ID:	SLD0092-CCV2	Injection Time:	16:16
Sequence Name:	AR1660CCV2		

		CONC. (ug/L)		RESPONSE FACTOR (RRF)			% DRIFT/DIFF	
COMPOUND	TYPE	STD	CCV	ICAL	CCV	MIN	CCV	LIMIT
Aroclor 1016	A	250.00	256	0.0493662	0.0499173		2.3	+/-20
Aroclor-1016 (1)	A	250.00	244	0.0303852	0.0295988		-2.4	
Aroclor-1016 (2)	A	250.00	235	0.0926308	0.0872180		-6.0	
Aroclor-1016 (3)	A	250.00	302	0.0452180	0.0545449		20.8	
Aroclor-1016 (4)	A	250.00	242	0.0292307	0.0283073		-3.2	
Aroclor 1016 [2C]	A	250.00	281	0.0545857	0.0599273		12.4	+/-20
Aroclor-1016 (1) [2C]	A	250.00	254	0.0468313	0.0475385		1.6	
Aroclor-1016 (2) [2C]	A	250.00	257	0.0949676	0.0976350		2.8	
Aroclor-1016 (3) [2C]	A	250.00	322	0.0428922	0.0553340		28.8	
Aroclor-1016 (4) [2C]	A	250.00	291	0.0336515	0.0392017		16.4	
Aroclor 1260	A	250.00	272	0.0392091	0.0427797		8.9	+/-20
Aroclor-1260 (1)	A	250.00	295	0.0287785	0.0339379		18.0	
Aroclor-1260 (2)	A	250.00	280	0.0300690	0.0336953		12.0	
Aroclor-1260 (3)	A	250.00	283	0.0797517	0.0902947		13.2	
Aroclor-1260 (4)	A	250.00	231	0.0401599	0.0371561		-7.6	
Aroclor-1260 (5)	A	250.00	272	0.0172866	0.0188145		8.8	
Aroclor 1260 [2C]	A	250.00	233	0.0699688	0.0672723		-6.7	+/-20
Aroclor-1260 (1) [2C]	A	250.00	238	0.0470406	0.0448406		-4.8	
Aroclor-1260 (2) [2C]	A	250.00	248	0.1200523	0.1190252		-0.8	
Aroclor-1260 (3) [2C]	A	250.00	202	0.0318590	0.0257888		-19.2	
Aroclor-1260 (4) [2C]	A	250.00	245	0.0809231	0.0794344		-2.0	
Decachlorobiphenyl	A	40.000	37.1	0.7878687	0.7313803		-7.3	+/-20
Tetrachlorometaxylene	A	40.000	40.2	1.1944880	1.2006970		0.5	+/-20
Decachlorobiphenyl [2C]	A	40.000	39.0	1.2182710	1.1880050		-2.5	+/-20
Tetrachlorometaxylene [2C]	A	40.000	40.0	1.1737210	1.1753790		0.0	+/-20

* Values outside of QC limits

Analytical Resources Inc.
Dual Column 608/8082 PCB Quantitation Report

Data file 1: /230406.b/04062315ECD7.D
Data file 2: /230406.b/230406.b/04062315ECD7.D
Method: \\target\share\chem4\ecd7.i\230406.b\PCB.m
Compound Sublist: AR1660.sub
Instrument, Inj. Vol.: ecd7.i, 2ul
Quant Method: Internal Std

ARI ID: AR1660CCV2
Client ID:
Injection Date: 06-APR-2023 16:16
Report Date: 04/06/2023 16:37
Matrix: NONE
Dilution Factor: 1.0

SURROGATES

ZB5 Col RT	ZB5 Col Shift	ZB5 Col Response	ZB35 Col RT	ZB35 Col Shift	ZB35 Col Response	ZB5 on col	ZB35 on col	RPD	Compound/Flag
5.811	0.001	338877	5.696	0.002	193502	40.2	40.1	0.4	Tetrachloro-m-xylene
13.899	-0.000	418170	14.124	0.001	340377	37.1	39.0	4.9	Decachlorobiphenyl

* Indicates RPD > 40%

INTERNAL STANDARD SUMMARY

Column 1

Standard Cpnd	Standard Area*	Sample Area	%D
Bromo-Nitrobenzene	673778	564467	-16.2
Hexabromobiphenyl	1429847	1143509	-20.0

Column 2

Standard Cpnd	Standard Area*	Sample Area	%D
Bromo-Nitrobenzene	315256	329259	4.4
Hexabromobiphenyl	513946	573023	11.5

* Standard Areas taken from Initial Cal Level 3
Initial Calibration Date: 24-FEB-2023
<- Indicates standard response outside Limits (-50 to +100%)

	ZB5 Col					ZB35 Col				
Aroclor	Peak#	RT	Shift	Area	Amount	Peak#	RT	Shift	Area	Amount
Aroclor-1016	1	7.276	0.000	52211	243.5	1	7.263	0.002	48914	253.8
Aroclor-1016	2	7.679	-0.002	153849	235.4	2	7.891	0.002	100460	257.0
Aroclor-1016	3	7.806	-0.000	96215	301.6	3	8.096	0.000	56935	322.5
Aroclor-1016	4	8.418	0.000	49933	242.1	4	8.321	-0.000	40336	291.2

Total Col1Ave (4 peaks): 255.6 Total Col2Ave (4 peaks): 281.1 RPD = 9
Corrected Ave (3 peaks): 240.3 Corrected Ave (3 peaks): 267.3 RPD = 11

CalAmt %D: 2.3 CalAmt %D: 12.5

Aroclor-1260	1	11.056	-0.001	121276	294.8	1	11.663	-0.000	80296	238.3
Aroclor-1260	2	11.373	0.000	120409	280.2	2	11.932	0.000	213138	247.9
Aroclor-1260	3	11.750	-0.001	322665	283.0	3	12.445	0.001	46180	202.4
Aroclor-1260	4	12.157	-0.000	132776	231.3	4	12.516	0.001	142243	245.4
Aroclor-1260	5	12.254	0.000	67233	272.1	NS	---			----

Total Col1Ave (5 peaks): 272.3 Total Col2Ave (4 peaks): 233.5 RPD = 15
Corrected Ave (4 peaks): 266.6 Corrected Ave (3 peaks): 228.7 RPD = 15

CalAmt %D: 8.9 CalAmt %D: -6.6

Total PCB Area Col1 (5.910 - 13.800) = 3374178 Col1 Total PCB = 0.5 ppm*

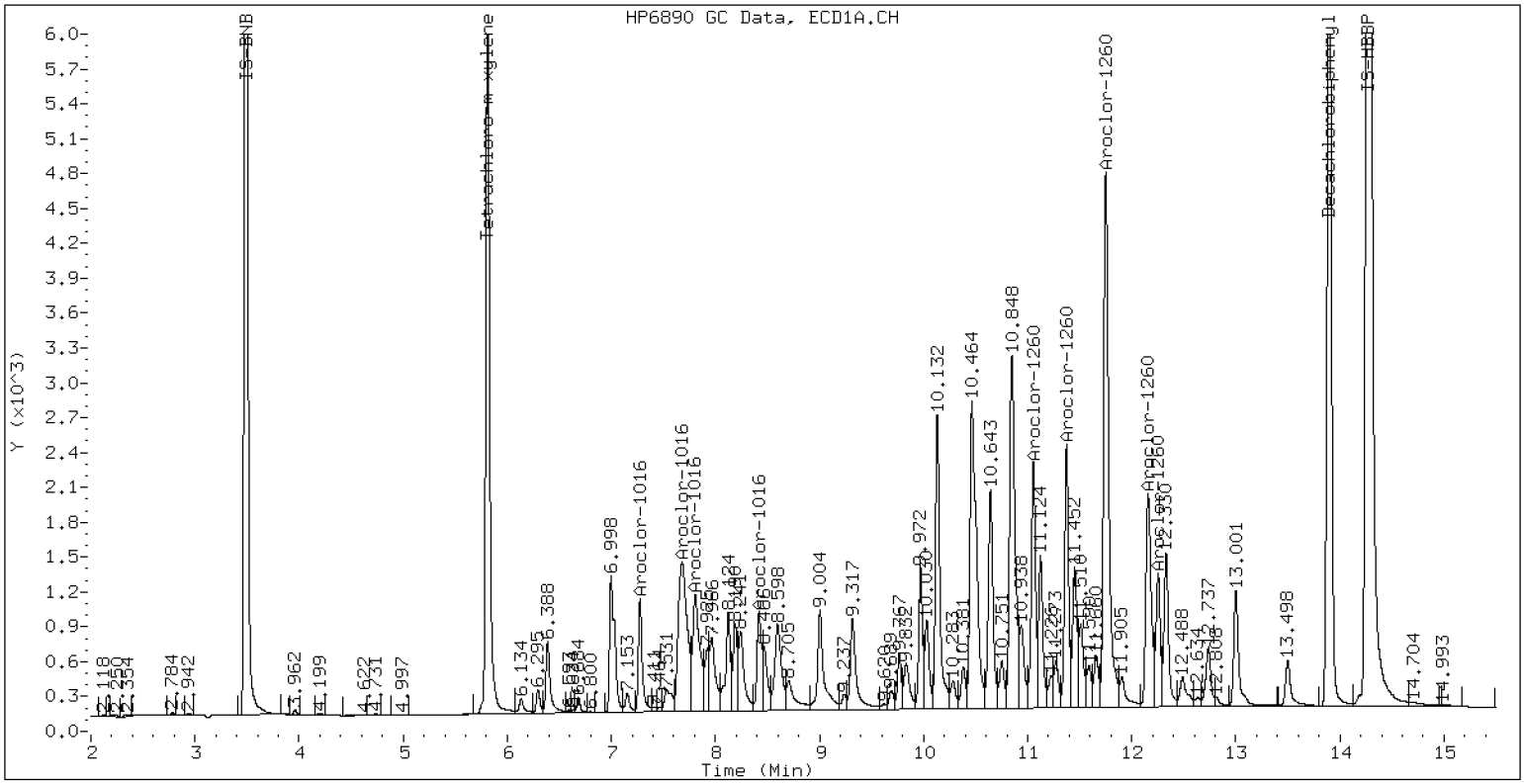
Total PCB Area Col2 (5.795 - 14.023) = 1978622 Col2 Total PCB = 0.5 ppm*

* Quantitated against AR1660 0.25ppm in Ical

PCB-Form 10 Mod.

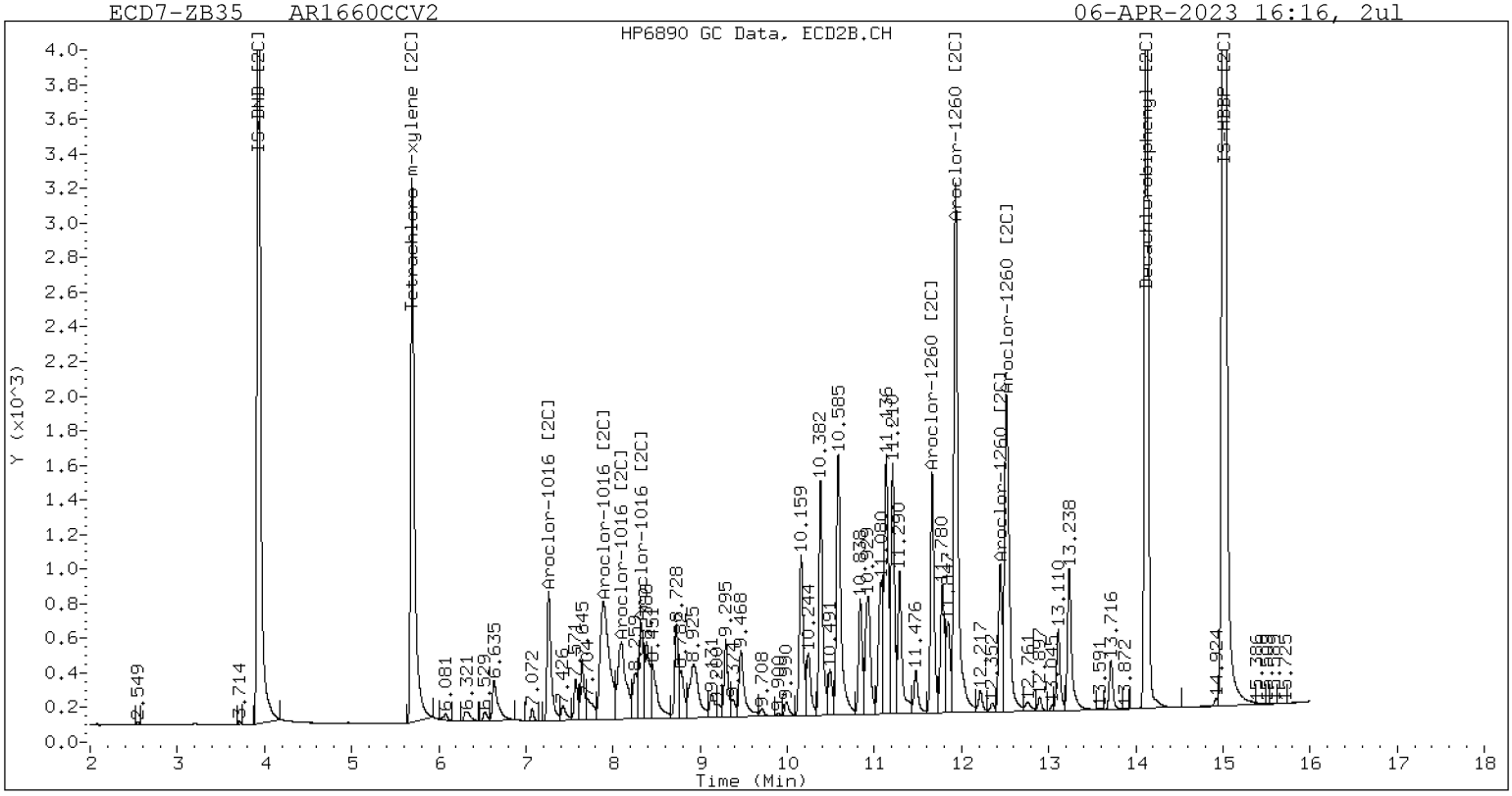
PCB Dual Column Chromatograms

ECD7-ZB5 AR1660CCV2 06-APR-2023 16:16, 2ul



ZB-5 Manual Integration: NO

ECD7-ZB35 AR1660CCV2 06-APR-2023 16:16, 2ul



ZB-35 Manual Integration: NO

Analytical Resources, LLC
Analytical Chemists and Consultants

Dual Column

ANALYSIS BATCH (SEQUENCE) SUMMARY

EPA 8082A

Laboratory:	Analytical Resources, LLC	SDG:	23C0692
Client:	HydroGeoLogic, Inc.	Project:	Portland Harbor Superfund Site 2021-2023
Sequence:	SLB0342	Instrument:	ECD7
		Calibration:	GB00069

Sample Name	Lab Sample ID	Column 1 File ID	Column 2 File ID	Matrix	Analysis Date/Time
Cal Standard	SLB0342-CAL1	02242302ECD7.D	02242302ECD7.D	NA	02/24/23 11:12
Cal Standard	SLB0342-CAL2	02242303ECD7.D	02242303ECD7.D	NA	02/24/23 11:33
Cal Standard	SLB0342-CAL3	02242304ECD7.D	02242304ECD7.D	NA	02/24/23 11:54
Cal Standard	SLB0342-CAL4	02242305ECD7.D	02242305ECD7.D	NA	02/24/23 12:15
Cal Standard	SLB0342-CAL5	02242306ECD7.D	02242306ECD7.D	NA	02/24/23 12:36
Cal Standard	SLB0342-CAL6	02242307ECD7.D	02242307ECD7.D	NA	02/24/23 12:57
Cal Standard	SLB0342-CAL7	02242308ECD7.D	02242308ECD7.D	NA	02/24/23 13:18
Cal Standard	SLB0342-CAL8	02242309ECD7.D	02242309ECD7.D	NA	02/24/23 13:39
Cal Standard	SLB0342-CAL9	02242310ECD7.D	02242310ECD7.D	NA	02/24/23 14:00
Cal Standard	SLB0342-CALA	02242311ECD7.D	02242311ECD7.D	NA	02/24/23 14:21
Cal Standard	SLB0342-CALB	02242312ECD7.D	02242312ECD7.D	NA	02/24/23 14:42
Secondary Cal Check	SLB0342-SCV1	02242313ECD7.D	02242313ECD7.D	NA	02/24/23 15:03
Secondary Cal Check	SLB0342-SCV2	02242314ECD7.D	02242314ECD7.D	NA	02/24/23 15:24
Secondary Cal Check	SLB0342-SCV3	02242315ECD7.D	02242315ECD7.D	NA	02/24/23 15:45
Secondary Cal Check	SLB0342-SCV4	02242316ECD7.D	02242316ECD7.D	NA	02/24/23 16:06
Secondary Cal Check	SLB0342-SCV5	02242317ECD7.D	02242317ECD7.D	NA	02/24/23 16:27
Secondary Cal Check	SLB0342-SCV6	02242318ECD7.D	02242318ECD7.D	NA	02/24/23 16:48

Analytical Resources, LLC
Analytical Chemists and Consultants

Dual Column

ANALYSIS BATCH (SEQUENCE) SUMMARY

EPA 8082A

Laboratory:	Analytical Resources, LLC	SDG:	23C0692
Client:	HydroGeoLogic, Inc.	Project:	Portland Harbor Superfund Site 2021-2023
Sequence:	SLD0092	Instrument:	ECD7
		Calibration:	GB00069

Sample Name	Lab Sample ID	Column 1 File ID	Column 2 File ID	Matrix	Analysis Date/Time
Initial Cal Check	SLD0092-ICV1	04062302ECD7.D	04062302ECD7.D	NA	04/06/23 11:47
Initial Cal Check	SLD0092-ICV2	04062303ECD7.D	04062303ECD7.D	NA	04/06/23 12:07
Blank	BLC0803-BLK1	04062304ECD7.D	04062304ECD7.D	Water	04/06/23 12:28
LCS	BLC0803-BS1	04062305ECD7.D	04062305ECD7.D	Water	04/06/23 12:49
LCS Dup	BLC0803-BSD1	04062306ECD7.D	04062306ECD7.D	Water	04/06/23 13:10
SIB-SW-WR198-030923	23C0692-01	04062307ECD7.D	04062307ECD7.D	Water	04/06/23 13:30
SIB-SW-WR186-030923	23C0692-02	04062308ECD7.D	04062308ECD7.D	Water	04/06/23 13:51
SIB-SW-WR15-030923	23C0692-03	04062309ECD7.D	04062309ECD7.D	Water	04/06/23 14:12
SIB-SW-WR428-030923	23C0692-04	04062310ECD7.D	04062310ECD7.D	Water	04/06/23 14:33
SIB-SW-WR71-030923	23C0692-05	04062312ECD7.D	04062312ECD7.D	Water	04/06/23 15:14
SIB-SW-WR30-030923	23C0692-06	04062313ECD7.D	04062313ECD7.D	Water	04/06/23 15:35
Calibration Check	SLD0092-CCV1	04062314ECD7.D	04062314ECD7.D	NA	04/06/23 15:56
Calibration Check	SLD0092-CCV2	04062315ECD7.D	04062315ECD7.D	NA	04/06/23 16:16

Analytical Resources, LLC
Analytical Chemists and Consultants

ANALYSIS SEQUENCE

SLD0092

Instrument: ECD7
Calibration ID: GB00069

Printed: 4/6/2023 4:42:22PM

Lab Number	Analysis	Container	Order	Position	STD ID	ISTD ID	Client	Comments
SLD0092-ICV1	QC		1		L000862	L000844		
SLD0092-ICV2	QC		2		L000856	L000844		
BLC0803-BLK1	QC		3			L000844		
BLC0803-BS1	QC		4			L000844		
BLC0803-BSD1	QC		5			L000844		
23C0692-01	8082A PCB Water 0.01	A 01	6			L000844	HydroGeoLogic, Inc.	
23C0692-02	8082A PCB Water 0.01	A 01	7			L000844	HydroGeoLogic, Inc.	
23C0692-03	8082A PCB Water 0.01	A 01	8			L000844	HydroGeoLogic, Inc.	
23C0692-04	8082A PCB Water 0.01	A 01	9			L000844	HydroGeoLogic, Inc.	
23C0692-05	8082A PCB Water 0.01	A 01	10			L000844	HydroGeoLogic, Inc.	
23C0692-06	8082A PCB Water 0.01	A 01	11			L000844	HydroGeoLogic, Inc.	
SLD0092-CCV1	QC		12		L000861	L000844		
SLD0092-CCV2	QC		13		L000856	L000844		

Samples Loaded By Date

Data Processed By Date

GC LOG SUMMARY FOR DATABATCH - \\target\share\chem4\ecd7.i\230406.b

	Inject Date/Time	Filename	DF	LabID	ClientID
1	06-APR-2023 11:26	04062301ECD7.D	1	DDTS	
2	06-APR-2023 11:47	04062302ECD7.D	1	AR1254ICV1	
3	06-APR-2023 12:07	04062303ECD7.D	1	AR1660CCV2	
4	06-APR-2023 12:28	04062304ECD7.D	1	BLC0803-BLK1	
5	06-APR-2023 12:49	04062305ECD7.D	1	BLC0803-BS1	
6	06-APR-2023 13:10	04062306ECD7.D	1	BLC0803-BSD1	
7	06-APR-2023 13:30	04062307ECD7.D	1	23C0692-01	
8	06-APR-2023 13:51	04062308ECD7.D	1	23C0692-02	
9	06-APR-2023 14:12	04062309ECD7.D	1	23C0692-03	
10	06-APR-2023 14:33	04062310ECD7.D	1	23C0692-04	
11	06-APR-2023 14:53	04062311ECD7.D	1	SURR TEST 2	
12	06-APR-2023 15:14	04062312ECD7.D	1	23C0692-05	
13	06-APR-2023 15:35	04062313ECD7.D	1	23C0692-06	
14	06-APR-2023 15:56	04062314ECD7.D	1	AR1248CCV1	
15	06-APR-2023 16:16	04062315ECD7.D	1	AR1660CCV2	

MANUAL INTEGRATION SUMMARY FOR DATABATCH - \\target\share\chem4\ecd7.i\230406.b

ARI Job No.: DDTS Method: PCB.m Instrument: ecd7.i Date: 06-APR-2023

Time	Filename	LabID	ClientId	DF	Manually Integrated Compounds
1126	04062301ECD7.D	DDTS		1	NO MANUAL INTEGRATION
1147	04062302ECD7.D	AR1254ICV1		1	NO MANUAL INTEGRATION
1207	04062303ECD7.D	AR1660CCV2		1	NO MANUAL INTEGRATION
1228	04062304ECD7.D	BLC0803-BLK1		1	NO MANUAL INTEGRATION
1249	04062305ECD7.D	BLC0803-BS1		1	NO MANUAL INTEGRATION
1310	04062306ECD7.D	BLC0803-BSD1		1	Aroclor-1016, Aroclor-1242, Aroclor-1248,
1330	04062307ECD7.D	23C0692-01		1	NO MANUAL INTEGRATION
1351	04062308ECD7.D	23C0692-02		1	NO MANUAL INTEGRATION
1412	04062309ECD7.D	23C0692-03		1	NO MANUAL INTEGRATION
1433	04062310ECD7.D	23C0692-04		1	NO MANUAL INTEGRATION
1453	04062311ECD7.D	SURR TEST 2		1	NO MANUAL INTEGRATION
1514	04062312ECD7.D	23C0692-05		1	NO MANUAL INTEGRATION
1535	04062313ECD7.D	23C0692-06		1	NO MANUAL INTEGRATION
1556	04062314ECD7.D	AR1248CCV1		1	NO MANUAL INTEGRATION
1616	04062315ECD7.D	AR1660CCV2		1	NO MANUAL INTEGRATION
1126	04062301ECD7.D	DDTS		1	NO MANUAL INTEGRATION
1147	04062302ECD7.D	AR1254ICV1		1	NO MANUAL INTEGRATION

MANUAL INTEGRATION SUMMARY FOR DATABATCH - \\target\share\chem4\ecd7.i\230406.b\230406.b

Time	Filename	LabID	ClientId	DF	Manually Integrated Compounds
1207	04062303ECD7.D	AR1660CCV2		1	NO MANUAL INTEGRATION
1228	04062304ECD7.D	BLC0803-BLK1		1	NO MANUAL INTEGRATION
1249	04062305ECD7.D	BLC0803-BS1		1	NO MANUAL INTEGRATION
1310	04062306ECD7.D	BLC0803-BSD1		1	NO MANUAL INTEGRATION
1330	04062307ECD7.D	23C0692-01		1	NO MANUAL INTEGRATION
1351	04062308ECD7.D	23C0692-02		1	NO MANUAL INTEGRATION
1412	04062309ECD7.D	23C0692-03		1	NO MANUAL INTEGRATION
1433	04062310ECD7.D	23C0692-04		1	NO MANUAL INTEGRATION
1453	04062311ECD7.D	SURR TEST 2		1	NO MANUAL INTEGRATION
1514	04062312ECD7.D	23C0692-05		1	NO MANUAL INTEGRATION
1535	04062313ECD7.D	23C0692-06		1	NO MANUAL INTEGRATION
1556	04062314ECD7.D	AR1248CCV1		1	NO MANUAL INTEGRATION
1616	04062315ECD7.D	AR1660CCV2		1	NO MANUAL INTEGRATION

Security Status Report

Date: 06-Apr-2023 16:50

04062301ECD7.D	Data Locked	richardl, 06-Apr-2023 16:40
04062302ECD7.D	Data Locked	richardl, 06-Apr-2023 16:40
04062303ECD7.D	Data Locked	richardl, 06-Apr-2023 16:48
04062304ECD7.D	Data Locked	richardl, 06-Apr-2023 16:40
04062305ECD7.D	Data Locked	richardl, 06-Apr-2023 16:40
04062306ECD7.D	Data Locked	richardl, 06-Apr-2023 16:40
04062307ECD7.D	Data Locked	richardl, 06-Apr-2023 16:40
04062308ECD7.D	Data Locked	richardl, 06-Apr-2023 16:40
04062309ECD7.D	Data Locked	richardl, 06-Apr-2023 16:40
04062310ECD7.D	Data Locked	richardl, 06-Apr-2023 16:40
04062311ECD7.D	Data Locked	richardl, 06-Apr-2023 16:40
04062312ECD7.D	Data Locked	richardl, 06-Apr-2023 16:40
04062313ECD7.D	Data Locked	richardl, 06-Apr-2023 16:40
04062314ECD7.D	Data Locked	richardl, 06-Apr-2023 16:40
04062315ECD7.D	Data Locked	richardl, 06-Apr-2023 16:40

Analytical Resources, LLC
Analytical Chemists and Consultants

SURROGATE RECOVERY AND RT SUMMARY
EPA 8082A

Laboratory:	Analytical Resources, LLC	SDG/WO:	23C0692
Client:	HydroGeoLogic, Inc.	Project:	Portland Harbor Superfund Site 2021-2023
Sequence:	SLB0342	Instrument:	ECD7
Calibration:	GB00069	Calibration Date:	02/24/2023

Surrogate Compound	Spike Level ug/L	% Recovery	Recovery Limits	RT	Calibration Mean RT	RT Diff	RT Diff Limit	Q
SLB0342-SCV1 (Water)			Lab File ID: 02242313ECD7.D				Analyzed: 02/24/23 15:03	
Decachlorobiphenyl	40.000	85.8	80 - 120	13.894	13.89483	-0.0008	N/A	
Tetrachlorometaxylene	40.000	87.4	80 - 120	5.807	5.8095	-0.0025	N/A	
Decachlorobiphenyl [2C]	40.000	93.4	80 - 120	14.119	14.11917	-0.0002	N/A	
Tetrachlorometaxylene [2C]	40.000	89.4	80 - 120	5.685	5.687167	-0.0022	N/A	
SLB0342-SCV2 (Water)			Lab File ID: 02242314ECD7.D				Analyzed: 02/24/23 15:24	
Decachlorobiphenyl	40.000	92.5	80 - 120	13.895	13.89483	0.0002	N/A	
Tetrachlorometaxylene	40.000	84.1	80 - 120	5.808	5.8095	-0.0015	N/A	
Decachlorobiphenyl [2C]	40.000	101	80 - 120	14.12	14.11917	0.0008	N/A	
Tetrachlorometaxylene [2C]	40.000	86.3	80 - 120	5.686	5.687167	-0.0012	N/A	
SLB0342-SCV3 (Water)			Lab File ID: 02242315ECD7.D				Analyzed: 02/24/23 15:45	
Decachlorobiphenyl	40.000	82.8	80 - 120	13.893	13.89483	-0.0018	N/A	
Tetrachlorometaxylene	40.000	87.2	80 - 120	5.808	5.8095	-0.0015	N/A	
Decachlorobiphenyl [2C]	40.000	90.8	80 - 120	14.118	14.11917	-0.0012	N/A	
Tetrachlorometaxylene [2C]	40.000	91.0	80 - 120	5.687	5.687167	-0.0002	N/A	
SLB0342-SCV4 (Water)			Lab File ID: 02242316ECD7.D				Analyzed: 02/24/23 16:06	
Decachlorobiphenyl	40.000	86.6	80 - 120	13.894	13.89483	-0.0008	N/A	
Tetrachlorometaxylene	40.000	90.3	80 - 120	5.806	5.8095	-0.0035	N/A	
Decachlorobiphenyl [2C]	40.000	94.8	80 - 120	14.119	14.11917	-0.0002	N/A	
Tetrachlorometaxylene [2C]	40.000	92.7	80 - 120	5.685	5.687167	-0.0022	N/A	
SLB0342-SCV5 (Water)			Lab File ID: 02242317ECD7.D				Analyzed: 02/24/23 16:27	
Decachlorobiphenyl	40.000	86.1	80 - 120	13.894	13.89483	-0.0008	N/A	
Tetrachlorometaxylene	40.000	90.0	80 - 120	5.806	5.8095	-0.0035	N/A	
Decachlorobiphenyl [2C]	40.000	94.6	80 - 120	14.119	14.11917	-0.0002	N/A	
Tetrachlorometaxylene [2C]	40.000	91.6	80 - 120	5.685	5.687167	-0.0022	N/A	
SLB0342-SCV6 (Water)			Lab File ID: 02242318ECD7.D				Analyzed: 02/24/23 16:48	
Decachlorobiphenyl	40.000	128	80 - 120	13.893	13.89483	-0.0018	N/A	
Tetrachlorometaxylene	40.000	92.7	80 - 120	5.806	5.8095	-0.0035	N/A	
Decachlorobiphenyl [2C]	40.000	141	80 - 120	14.118	14.11917	-0.0012	N/A	
Tetrachlorometaxylene [2C]	40.000	95.4	80 - 120	5.685	5.687167	-0.0022	N/A	

Analytical Resources, LLC
Analytical Chemists and Consultants

SURROGATE RECOVERY AND RT SUMMARY
EPA 8082A

Laboratory:	Analytical Resources, LLC	SDG/WO:	23C0692
Client:	HydroGeoLogic, Inc.	Project:	Portland Harbor Superfund Site 2021-2023
Sequence:	SLD0092	Instrument:	ECD7
Calibration:	GB00069	Calibration Date:	02/24/2023

Surrogate Compound	Spike Level ug/L	% Recovery	Recovery Limits	RT	Calibration Mean RT	RT Diff	RT Diff Limit	Q
SLD0092-ICV1 (Water)			Lab File ID: 04062302ECD7.D			Analyzed: 04/06/23 11:47		
Decachlorobiphenyl	40.000	197	80 - 120	13.907	13.89483	0.0122	N/A	*
Tetrachlorometaxylene	40.000	88.5	80 - 120	5.813	5.8095	0.0035	N/A	
Decachlorobiphenyl [2C]	40.000	91.3	80 - 120	14.123	14.11917	0.0038	N/A	
Tetrachlorometaxylene [2C]	40.000	97.3	80 - 120	5.694	5.687167	0.0068	N/A	
SLD0092-ICV2 (Water)			Lab File ID: 04062303ECD7.D			Analyzed: 04/06/23 12:07		
Decachlorobiphenyl	40.000	89.3	80 - 120	13.899	13.89483	0.0042	N/A	
Tetrachlorometaxylene	40.000	100	80 - 120	5.81	5.8095	0.0005	N/A	
Decachlorobiphenyl [2C]	40.000	94.3	80 - 120	14.122	14.11917	0.0028	N/A	
Tetrachlorometaxylene [2C]	40.000	102	80 - 120	5.694	5.687167	0.0068	N/A	
BLC0803-BLK1 (Water)			Lab File ID: 04062304ECD7.D			Analyzed: 04/06/23 12:28		
Decachlorobiphenyl	0.020000	65.5	29 - 120	13.895	13.89483	0.0002	N/A	
Tetrachlorometaxylene	0.020000	70.8	32 - 120	5.809	5.8095	-0.0005	N/A	
Decachlorobiphenyl [2C]	0.020000	67.2	29 - 120	14.121	14.11917	0.0018	N/A	
Tetrachlorometaxylene [2C]	0.020000	64.5	32 - 120	5.693	5.687167	0.0058	N/A	
BLC0803-BS1 (Water)			Lab File ID: 04062305ECD7.D			Analyzed: 04/06/23 12:49		
Decachlorobiphenyl	0.020000	47.3	29 - 120	13.895	13.89483	0.0002	N/A	
Tetrachlorometaxylene	0.020000	58.1	32 - 120	5.808	5.8095	-0.0015	N/A	
Decachlorobiphenyl [2C]	0.020000	47.4	29 - 120	14.12	14.11917	0.0008	N/A	
Tetrachlorometaxylene [2C]	0.020000	50.0	32 - 120	5.693	5.687167	0.0058	N/A	
BLC0803-BSD1 (Water)			Lab File ID: 04062306ECD7.D			Analyzed: 04/06/23 13:10		
Decachlorobiphenyl	0.020000	53.5	29 - 120	13.895	13.89483	0.0002	N/A	
Tetrachlorometaxylene	0.020000	68.0	32 - 120	5.808	5.8095	-0.0015	N/A	
Decachlorobiphenyl [2C]	0.020000	54.0	29 - 120	14.121	14.11917	0.0018	N/A	
Tetrachlorometaxylene [2C]	0.020000	60.4	32 - 120	5.693	5.687167	0.0058	N/A	
23C0692-01 (Water)			Lab File ID: 04062307ECD7.D			Analyzed: 04/06/23 13:30		
Decachlorobiphenyl	0.020000	62.9	29 - 120	13.891	13.89483	-0.0038	N/A	
Tetrachlorometaxylene	0.020000	66.5	32 - 120	5.808	5.8095	-0.0015	N/A	
Decachlorobiphenyl [2C]	0.020000	63.0	29 - 120	14.117	14.11917	-0.0022	N/A	
Tetrachlorometaxylene [2C]	0.020000	59.7	32 - 120	5.692	5.687167	0.0048	N/A	

Analytical Resources, LLC
Analytical Chemists and Consultants

SURROGATE RECOVERY AND RT SUMMARY
EPA 8082A

Laboratory:	Analytical Resources, LLC	SDG/WO:	23C0692
Client:	HydroGeoLogic, Inc.	Project:	Portland Harbor Superfund Site 2021-2023
Sequence:	SLD0092	Instrument:	ECD7
Calibration:	GB00069	Calibration Date:	02/24/2023

Surrogate Compound	Spike Level ug/L	% Recovery	Recovery Limits	RT	Calibration Mean RT	RT Diff	RT Diff Limit	Q
23C0692-02 (Water)			Lab File ID: 04062308ECD7.D			Analyzed: 04/06/23 13:51		
Decachlorobiphenyl	0.020000	55.2	29 - 120	13.886	13.89483	-0.0088	N/A	
Tetrachlorometaxylene	0.020000	65.9	32 - 120	5.807	5.8095	-0.0025	N/A	
Decachlorobiphenyl [2C]	0.020000	54.8	29 - 120	14.112	14.11917	-0.0072	N/A	
Tetrachlorometaxylene [2C]	0.020000	58.1	32 - 120	5.692	5.687167	0.0048	N/A	
23C0692-03 (Water)			Lab File ID: 04062309ECD7.D			Analyzed: 04/06/23 14:12		
Decachlorobiphenyl	0.020000	67.5	29 - 120	13.888	13.89483	-0.0068	N/A	
Tetrachlorometaxylene	0.020000	63.2	32 - 120	5.807	5.8095	-0.0025	N/A	
Decachlorobiphenyl [2C]	0.020000	65.6	29 - 120	14.115	14.11917	-0.0042	N/A	
Tetrachlorometaxylene [2C]	0.020000	60.7	32 - 120	5.691	5.687167	0.0038	N/A	
23C0692-04 (Water)			Lab File ID: 04062310ECD7.D			Analyzed: 04/06/23 14:33		
Decachlorobiphenyl	0.020000	59.2	29 - 120	13.89	13.89483	-0.0048	N/A	
Tetrachlorometaxylene	0.020000	61.7	32 - 120	5.808	5.8095	-0.0015	N/A	
Decachlorobiphenyl [2C]	0.020000	62.5	29 - 120	14.116	14.11917	-0.0032	N/A	
Tetrachlorometaxylene [2C]	0.020000	55.6	32 - 120	5.692	5.687167	0.0048	N/A	
23C0692-05 (Water)			Lab File ID: 04062312ECD7.D			Analyzed: 04/06/23 15:14		
Decachlorobiphenyl	0.020000	67.0	29 - 120	13.89	13.89483	-0.0048	N/A	
Tetrachlorometaxylene	0.020000	67.9	32 - 120	5.807	5.8095	-0.0025	N/A	
Decachlorobiphenyl [2C]	0.020000	68.3	29 - 120	14.116	14.11917	-0.0032	N/A	
Tetrachlorometaxylene [2C]	0.020000	61.3	32 - 120	5.691	5.687167	0.0038	N/A	
23C0692-06 (Water)			Lab File ID: 04062313ECD7.D			Analyzed: 04/06/23 15:35		
Decachlorobiphenyl	0.020000	58.6	29 - 120	13.884	13.89483	-0.0108	N/A	
Tetrachlorometaxylene	0.020000	59.4	32 - 120	5.806	5.8095	-0.0035	N/A	
Decachlorobiphenyl [2C]	0.020000	54.1	29 - 120	14.109	14.11917	-0.0102	N/A	
Tetrachlorometaxylene [2C]	0.020000	55.9	32 - 120	5.69	5.687167	0.0028	N/A	
SLD0092-CCV1 (Water)			Lab File ID: 04062314ECD7.D			Analyzed: 04/06/23 15:56		
Decachlorobiphenyl	40.000	88.8	80 - 120	13.899	13.89483	0.0042	N/A	
Tetrachlorometaxylene	40.000	94.0	80 - 120	5.81	5.8095	0.0005	N/A	
Decachlorobiphenyl [2C]	40.000	89.5	80 - 120	14.123	14.11917	0.0038	N/A	
Tetrachlorometaxylene [2C]	40.000	99.0	80 - 120	5.694	5.687167	0.0068	N/A	

Analytical Resources, LLC
Analytical Chemists and Consultants

SURROGATE RECOVERY AND RT SUMMARY
EPA 8082A

Laboratory:	Analytical Resources, LLC	SDG/WO:	23C0692
Client:	HydroGeoLogic, Inc.	Project:	Portland Harbor Superfund Site 2021-2023
Sequence:	SLD0092	Instrument:	ECD7
Calibration:	GB00069	Calibration Date:	02/24/2023

Surrogate Compound	Spike Level ug/L	% Recovery	Recovery Limits	RT	Calibration Mean RT	RT Diff	RT Diff Limit	Q
SLD0092-CCV2 (Water)			Lab File ID: 04062315ECD7.D				Analyzed: 04/06/23 16:16	
Decachlorobiphenyl	40.000	92.8	80 - 120	13.899	13.89483	0.0042	N/A	
Tetrachlorometaxylene	40.000	101	80 - 120	5.81	5.8095	0.0005	N/A	
Decachlorobiphenyl [2C]	40.000	97.5	80 - 120	14.123	14.11917	0.0038	N/A	
Tetrachlorometaxylene [2C]	40.000	100	80 - 120	5.696	5.687167	0.0088	N/A	

Analytical Resources, LLC
Analytical Chemists and Consultants

INTERNAL STANDARD AREA AND RT SUMMARY
EPA 8082A

Laboratory:	Analytical Resources, LLC	SDG:	23C0692
Client:	HydroGeoLogic, Inc.	Project:	Portland Harbor Superfund Site 2021-2023
Sequence:	SLB0342	Instrument:	ECD7
		Calibration:	GB00069

Internal Standard	Response	RT	Reference Response	Reference RT	Area %	Area % Limits	RT Diff	RT Diff Limit	Q
Secondary Cal Check (SLB0342-SCV1)		(Water)		Lab File ID: 02242313ECD7.D				Analyzed: 02/24/23 15:03	
1-Bromo-2-Nitrobenzene	645975	3.489	673778	3.493	96	50 - 200	-0.004	+/-0.50	
Hexabromobiphenyl	1524245	14.268	1429847	14.268	107	50 - 200	0.000	+/-0.50	
1-Bromo-2-Nitrobenzene [2C]	316115	3.927	315256	3.928	100	50 - 200	-0.001	+/-0.50	
Hexabromobiphenyl [2C]	556950	15.007	513946	15.008	108	50 - 200	-0.001	+/-0.50	
Secondary Cal Check (SLB0342-SCV2)		(Water)		Lab File ID: 02242314ECD7.D				Analyzed: 02/24/23 15:24	
1-Bromo-2-Nitrobenzene	705650	3.493	673778	3.493	105	50 - 200	0.000	+/-0.50	
Hexabromobiphenyl	1555683	14.267	1429847	14.268	109	50 - 200	-0.001	+/-0.50	
1-Bromo-2-Nitrobenzene [2C]	340433	3.929	315256	3.928	108	50 - 200	0.001	+/-0.50	
Hexabromobiphenyl [2C]	565609	15.008	513946	15.008	110	50 - 200	0.000	+/-0.50	
Secondary Cal Check (SLB0342-SCV3)		(Water)		Lab File ID: 02242315ECD7.D				Analyzed: 02/24/23 15:45	
1-Bromo-2-Nitrobenzene	646554	3.49	673778	3.493	96	50 - 200	-0.003	+/-0.50	
Hexabromobiphenyl	1529451	14.268	1429847	14.268	107	50 - 200	0.000	+/-0.50	
1-Bromo-2-Nitrobenzene [2C]	316066	3.928	315256	3.928	100	50 - 200	0.000	+/-0.50	
Hexabromobiphenyl [2C]	557213	15.008	513946	15.008	108	50 - 200	0.000	+/-0.50	
Secondary Cal Check (SLB0342-SCV4)		(Water)		Lab File ID: 02242316ECD7.D				Analyzed: 02/24/23 16:06	
1-Bromo-2-Nitrobenzene	656887	3.488	673778	3.493	97	50 - 200	-0.005	+/-0.50	
Hexabromobiphenyl	1585505	14.267	1429847	14.268	111	50 - 200	-0.001	+/-0.50	
1-Bromo-2-Nitrobenzene [2C]	320936	3.925	315256	3.928	102	50 - 200	-0.003	+/-0.50	
Hexabromobiphenyl [2C]	570006	15.007	513946	15.008	111	50 - 200	-0.001	+/-0.50	
Secondary Cal Check (SLB0342-SCV5)		(Water)		Lab File ID: 02242317ECD7.D				Analyzed: 02/24/23 16:27	
1-Bromo-2-Nitrobenzene	661953	3.489	673778	3.493	98	50 - 200	-0.004	+/-0.50	
Hexabromobiphenyl	1574993	14.268	1429847	14.268	110	50 - 200	0.000	+/-0.50	
1-Bromo-2-Nitrobenzene [2C]	317807	3.926	315256	3.928	101	50 - 200	-0.002	+/-0.50	
Hexabromobiphenyl [2C]	565951	15.007	513946	15.008	110	50 - 200	-0.001	+/-0.50	
Secondary Cal Check (SLB0342-SCV6)		(Water)		Lab File ID: 02242318ECD7.D				Analyzed: 02/24/23 16:48	
1-Bromo-2-Nitrobenzene	656592	3.489	673778	3.493	97	50 - 200	-0.004	+/-0.50	
Hexabromobiphenyl	1584453	14.268	1429847	14.268	111	50 - 200	0.000	+/-0.50	
1-Bromo-2-Nitrobenzene [2C]	314741	3.926	315256	3.928	100	50 - 200	-0.002	+/-0.50	
Hexabromobiphenyl [2C]	568346	15.007	513946	15.008	111	50 - 200	-0.001	+/-0.50	

Analytical Resources, LLC
Analytical Chemists and Consultants

INTERNAL STANDARD AREA AND RT SUMMARY
EPA 8082A

Laboratory:	Analytical Resources, LLC	SDG:	23C0692
Client:	HydroGeoLogic, Inc.	Project:	Portland Harbor Superfund Site 2021-2023
Sequence:	SLD0092	Instrument:	ECD7
		Calibration:	GB00069

Internal Standard	Response	RT	Reference Response	Reference RT	Area %	Area % Limits	RT Diff	RT Diff Limit	Q
Initial Cal Check (SLD0092-ICV1)		(Water)	Lab File ID: 04062302ECD7.D				Analyzed: 04/06/23 11:47		
1-Bromo-2-Nitrobenzene	1978005	3.494	673778	3.493	294	50 - 200	0.001	+/-0.50	*
Hexabromobiphenyl	3904055	14.266	1429847	14.268	273	50 - 200	-0.002	+/-0.50	*
1-Bromo-2-Nitrobenzene [2C]	338952	3.929	315256	3.928	108	50 - 200	0.001	+/-0.50	
Hexabromobiphenyl [2C]	667096	15.013	513946	15.008	130	50 - 200	0.005	+/-0.50	
Initial Cal Check (SLD0092-ICV2)		(Water)	Lab File ID: 04062303ECD7.D				Analyzed: 04/06/23 12:07		
1-Bromo-2-Nitrobenzene	578469	3.488	673778	3.493	86	50 - 200	-0.005	+/-0.50	
Hexabromobiphenyl	1618957	14.278	1429847	14.268	113	50 - 200	0.010	+/-0.50	
1-Bromo-2-Nitrobenzene [2C]	340711	3.929	315256	3.928	108	50 - 200	0.001	+/-0.50	
Hexabromobiphenyl [2C]	683164	15.013	513946	15.008	133	50 - 200	0.005	+/-0.50	
Blank (BLC0803-BLK1)		(Water)	Lab File ID: 04062304ECD7.D				Analyzed: 04/06/23 12:28		
1-Bromo-2-Nitrobenzene	620884	3.488	673778	3.493	92	50 - 200	-0.005	+/-0.50	
Hexabromobiphenyl	1602172	14.271	1429847	14.268	112	50 - 200	0.003	+/-0.50	
1-Bromo-2-Nitrobenzene [2C]	394651	3.93	315256	3.928	125	50 - 200	0.002	+/-0.50	
Hexabromobiphenyl [2C]	714030	15.009	513946	15.008	139	50 - 200	0.001	+/-0.50	
LCS (BLC0803-BS1)		(Water)	Lab File ID: 04062305ECD7.D				Analyzed: 04/06/23 12:49		
1-Bromo-2-Nitrobenzene	642391	3.488	673778	3.493	95	50 - 200	-0.005	+/-0.50	
Hexabromobiphenyl	1690923	14.272	1429847	14.268	118	50 - 200	0.004	+/-0.50	
1-Bromo-2-Nitrobenzene [2C]	418539	3.93	315256	3.928	133	50 - 200	0.002	+/-0.50	
Hexabromobiphenyl [2C]	762095	15.011	513946	15.008	148	50 - 200	0.003	+/-0.50	
LCS Dup (BLC0803-BSD1)		(Water)	Lab File ID: 04062306ECD7.D				Analyzed: 04/06/23 13:10		
1-Bromo-2-Nitrobenzene	624474	3.488	673778	3.493	93	50 - 200	-0.005	+/-0.50	
Hexabromobiphenyl	1687529	14.271	1429847	14.268	118	50 - 200	0.003	+/-0.50	
1-Bromo-2-Nitrobenzene [2C]	409719	3.93	315256	3.928	130	50 - 200	0.002	+/-0.50	
Hexabromobiphenyl [2C]	750544	15.01	513946	15.008	146	50 - 200	0.002	+/-0.50	
SIB-SW-WR198-030923 (23C0692-01)		(Water)	Lab File ID: 04062307ECD7.D				Analyzed: 04/06/23 13:30		
1-Bromo-2-Nitrobenzene	633246	3.488	673778	3.493	94	50 - 200	-0.005	+/-0.50	
Hexabromobiphenyl	1343280	14.262	1429847	14.268	94	50 - 200	-0.006	+/-0.50	
1-Bromo-2-Nitrobenzene [2C]	409102	3.93	315256	3.928	130	50 - 200	0.002	+/-0.50	
Hexabromobiphenyl [2C]	677507	15.004	513946	15.008	132	50 - 200	-0.004	+/-0.50	

Analytical Resources, LLC
Analytical Chemists and Consultants

INTERNAL STANDARD AREA AND RT SUMMARY

EPA 8082A

Laboratory:	Analytical Resources, LLC	SDG:	23C0692
Client:	HydroGeoLogic, Inc.	Project:	Portland Harbor Superfund Site 2021-2023
Sequence:	SLD0092	Instrument:	ECD7
		Calibration:	GB00069

Internal Standard	Response	RT	Reference Response	Reference RT	Area %	Area % Limits	RT Diff	RT Diff Limit	Q
SIB-SW-WR186-030923 (23C0692-02)		(Water)		Lab File ID: 04062308ECD7.D				Analyzed: 04/06/23 13:51	
1-Bromo-2-Nitrobenzene	622901	3.489	673778	3.493	92	50 - 200	-0.004	+/-0.50	
Hexabromobiphenyl	1000735	14.255	1429847	14.268	70	50 - 200	-0.013	+/-0.50	
1-Bromo-2-Nitrobenzene [2C]	409509	3.93	315256	3.928	130	50 - 200	0.002	+/-0.50	
Hexabromobiphenyl [2C]	614967	15	513946	15.008	120	50 - 200	-0.008	+/-0.50	
SIB-SW-WR15-030923 (23C0692-03)		(Water)		Lab File ID: 04062309ECD7.D				Analyzed: 04/06/23 14:12	
1-Bromo-2-Nitrobenzene	617886	3.489	673778	3.493	92	50 - 200	-0.004	+/-0.50	
Hexabromobiphenyl	960199	14.259	1429847	14.268	67	50 - 200	-0.009	+/-0.50	
1-Bromo-2-Nitrobenzene [2C]	400071	3.93	315256	3.928	127	50 - 200	0.002	+/-0.50	
Hexabromobiphenyl [2C]	568934	15.003	513946	15.008	111	50 - 200	-0.005	+/-0.50	
SIB-SW-WR428-030923 (23C0692-04)		(Water)		Lab File ID: 04062310ECD7.D				Analyzed: 04/06/23 14:33	
1-Bromo-2-Nitrobenzene	651525	3.488	673778	3.493	97	50 - 200	-0.005	+/-0.50	
Hexabromobiphenyl	1176138	14.263	1429847	14.268	82	50 - 200	-0.005	+/-0.50	
1-Bromo-2-Nitrobenzene [2C]	424743	3.929	315256	3.928	135	50 - 200	0.001	+/-0.50	
Hexabromobiphenyl [2C]	639654	15.004	513946	15.008	124	50 - 200	-0.004	+/-0.50	
SIB-SW-WR71-030923 (23C0692-05)		(Water)		Lab File ID: 04062312ECD7.D				Analyzed: 04/06/23 15:14	
1-Bromo-2-Nitrobenzene	650381	3.488	673778	3.493	97	50 - 200	-0.005	+/-0.50	
Hexabromobiphenyl	1328486	14.263	1429847	14.268	93	50 - 200	-0.005	+/-0.50	
1-Bromo-2-Nitrobenzene [2C]	407514	3.929	315256	3.928	129	50 - 200	0.001	+/-0.50	
Hexabromobiphenyl [2C]	682528	15.005	513946	15.008	133	50 - 200	-0.003	+/-0.50	
SIB-SW-WR30-030923 (23C0692-06)		(Water)		Lab File ID: 04062313ECD7.D				Analyzed: 04/06/23 15:35	
1-Bromo-2-Nitrobenzene	608934	3.489	673778	3.493	90	50 - 200	-0.004	+/-0.50	
Hexabromobiphenyl	464263	14.249	1429847	14.268	32	50 - 200	-0.019	+/-0.50	*
1-Bromo-2-Nitrobenzene [2C]	383092	3.93	315256	3.928	122	50 - 200	0.002	+/-0.50	
Hexabromobiphenyl [2C]	360827	14.994	513946	15.008	70	50 - 200	-0.014	+/-0.50	

Analytical Resources, LLC
Analytical Chemists and Consultants

HOLDING TIME SUMMARY

Analysis: EPA 8082A

Laboratory: Analytical Resources, LLC
SDG: 23C0692
Client: HydroGeoLogic, Inc.
Project: Portland Harbor Superfund Site 2021-2023

Sample Name	Date Collected	Date Received	Date Prepared	Days to Prep	Max Days to Prep	Date Analyzed	Days to Analysis	Max Days to Analysis	Q
SIB-SW-WR198-030923 23C0692-01	03/09/23 16:05	03/29/23 09:36	03/30/23 15:00	20	7	04/06/23 13:30	7	40	*
SIB-SW-WR186-030923 23C0692-02	03/09/23 16:26	03/29/23 09:36	03/30/23 15:00	20	7	04/06/23 13:51	7	40	*
SIB-SW-WR15-030923 23C0692-03	03/09/23 16:32	03/29/23 09:36	03/30/23 15:00	20	7	04/06/23 14:12	7	40	*
SIB-SW-WR428-030923 23C0692-04	03/09/23 18:20	03/29/23 09:36	03/30/23 15:00	20	7	04/06/23 14:33	7	40	*
SIB-SW-WR71-030923 23C0692-05	03/09/23 17:50	03/29/23 09:36	03/30/23 15:00	20	7	04/06/23 15:14	7	40	*
SIB-SW-WR30-030923 23C0692-06	03/09/23 16:53	03/29/23 09:36	03/30/23 15:00	20	7	04/06/23 15:35	7	40	*

* Indicates hold time exceedance.

Analytical Resources, LLC
Analytical Chemists and Consultants

METHOD DETECTION AND REPORTING LIMITS

EPA 8082A

Laboratory: Analytical Resources, LLC
SDG: 23C0692
Client: HydroGeoLogic, Inc.
Project: Portland Harbor Superfund Site 2021-202
Matrix: Water
Instrument: ECD7

Analyte	MDL	LOD	Units
Aroclor 1016	0.002	0.005	ug/L
Aroclor 1016 [2C]	0.002	0.005	ug/L
Aroclor 1221	0.002	0.005	ug/L
Aroclor 1221 [2C]	0.002	0.005	ug/L
Aroclor 1232	0.002	0.005	ug/L
Aroclor 1232 [2C]	0.002	0.005	ug/L
Aroclor 1242	0.002	0.005	ug/L
Aroclor 1242 [2C]	0.002	0.005	ug/L
Aroclor 1248	0.002	0.005	ug/L
Aroclor 1248 [2C]	0.002	0.005	ug/L
Aroclor 1254	0.002	0.005	ug/L
Aroclor 1254 [2C]	0.002	0.005	ug/L
Aroclor 1260	0.003	0.005	ug/L
Aroclor 1260 [2C]	0.003	0.005	ug/L
Aroclor 1262	0.003	0.005	ug/L
Aroclor 1262 [2C]	0.003	0.005	ug/L
Aroclor 1268	0.003	0.005	ug/L
Aroclor 1268 [2C]	0.003	0.005	ug/L

125 Market Street
New Haven, CT 06513
USA

AccuStandard® Inc.

Tel (203)786-5290
Fax (203)786-5287
www.AccuStandard.com

CERTIFICATE OF ANALYSIS

Catalog No: S-279N
Description: Tetrachloro-m-xylene
Lot: 0052481B-1
Solvent: N/A
Hazards: *Refer to SDS for complete safety information*

Signal Word: Warning

Date Certified: Jul 28, 2005
Expiration: Jul 28, 2015
Sample Size: 100 mg
Components: 1
Storage Condition: Ambient (>5 °C)

Certified Reference Material

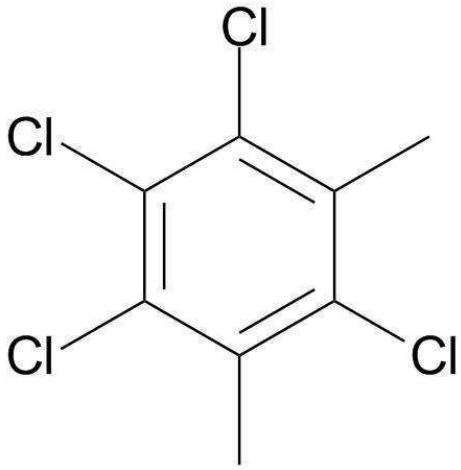
ANAB ACCREDITED ISO 17034 REFERENCE MATERIAL PRODUCER AR-1463

ilac-MRA

Component	CAS #	Purity % (GC/FID)	Prepared Concentration	Certified Analyte Concentration[1]
Tetrachloro-meta-xylene	877-09-8	96.0	N/A	N/A

Identification:

Molecular formula: C8H6Cl4
Molecular weight: 243.94



C000147
tetrachlormetaxylene
Expires 1/15/2020
Prepared By Joshua Rains 1/15/2014

This Certified Reference Material was verified in accordance with ISO/IEC 17025

A product with a suffix (-1A, -2B, etc. or -01, -02, etc.) on its lot number has had its expiration date extended and is identical to the same lot number without the suffix.

[1] The Uncertainty calculated for this product is ±2.4%. These values are the expanded uncertainty and represent an estimated standard deviation equal to the positive square root of the total variation of the uncertainty of components. A normal distribution is assumed and a coverage factor of K=2 is chosen using approximately a 95% confidence level.

Labels and certificates follow U.S. Conventions in reporting numerical values: A comma (,) is used to separate units of one-thousand or greater. A period (.) is used as a decimal place marker.

Metrological traceability is established through in-house validated methods.

Purity, if stated, is equal to 100% minus found impurity components. Impurity components have not been identified.

The information on this certificate may not be reproduced without the express permission of the manufacturer. See reverse side for additional information

Hazard Information: Please refer to the SDS for information regarding the hazards associated with using this material.

This product was prepared according to in-house procedures and is guaranteed to be homogeneous.

Certified By: _____
Larry Decker, Organic QC Manager

For use in routine laboratory analysis.

AccuStandard is accredited to ISO 17034, ISO/IEC 17025 and certified to ISO 9001:2015

EXPIRED AccuStandard

AccuStandard
125 Market Street
New Haven, CT 06513
(203) 786-5290

CERTIFICATE OF PRODUCT DATA

PRODUCT: C-209N
EXPIRATION: Jul 28, 2015
DESCRIPTION: 2,2',3,3',4,4',5,5',6,6'-Decachlorobiphenyl
LOT #: 990521LB-AC
SOLVENT: N/A

This product is guaranteed accurate to ±0.5% of the Certified Analyte concentration through the Expiration Date on the Label.

Component	CAS #	Purity % (GC/MS)	Prepared Concentration[1]	Certified Analyte Concentration[2]
2,2',3,3',4,4',5,5',6,6'-Decachlorobiphenyl	2051-24-3	100	N/A	N/A

2,

C000148
decachlorbiphenyl
Expires 1/15/2020
Prepared By Joshua Rains 1/15/2014

* I 1768 A

Certified by: R. Cooper

1. All weights are traceable through National Institute of Standards & Technology, Test No. 822/254480
2. Certified Analyte Concentration = Purity x Prepared Concentration. The Uncertainty calculated for this product is ±4% which is the Combined Uncertainty uc(y). It represents an estimated standard deviation equal to the positive square root of the total variance of the uncertainty of components. The Expanded Uncertainty is U which is Uc(y) *K where K is the coverage factor at the 95% confidence level (K=2).
3. A product with a suffix (-1A, -2B, etc.) on its lot# has had its expiration date extended and is identical to the same lot# without the suffix.

Please note: AccuStandard follows the U.S. conventions in reporting numerical values, on both certificates and labels.

A comma (,) is used to separate units of one-thousand or greater.
A period (.) is used as a decimal place marker.

This product was manufactured in accordance to quality system requirements of ISO 9001:2000 and ISO 17025

* Recertified 2 4-6-09 (JS)

Analytical Resources, Incorporated
Analytical Chemists and Consultants

Analytical Standard Record

Standard ID: C000148 **Printed: 4/23/2015 11:54:44AM**

Description:	decachlorbiphenyl	Expires:	15-Jan-2020
Standard Type:	Other	Prepared:	15-Jan-2014
Solvent:	na/a	Prepared By:	Joshua Rains
Final Volume (mls):	1	Department:	Organics
Vials:	1	Last Edit:	27-Feb-2015 13:03 by JGR
Vendor:	Accustandard	Lot #:	990521lb-ac
Vendor Catalog #:			

Comments

see i1768a
SOM calibrations added 06/12/14 sdrd

Analyte	CAS Number	Concentration	Units
Decachlorobiphenyl [2C]	2051-24-3	1000000	ug/mL
Decachlorobiphenyl	2051-24-3	1000000	ug/mL
DCB 1660 [2C]	2051-24-3	1000000	ug/mL
DCB 1660	2051-24-3	1000000	ug/mL
DCB [2C]	2051-24-3	1000000	ug/mL
DCB (A) [2C]	2051-24-3	1000000	ug/mL
DCB (A)	2051-24-3	1000000	ug/mL
DCB	2051-24-3	1000000	ug/mL

Reviewed By Date

phenomenex
...breaking with tradition

Certificate of Analysis

Phenova Certified Reference Materials are sold by Phenomenex.
411 Madrid Ave., Torrance, CA 90501 USA ▪ Tel: 310-212-0555 ▪ Fax: 310-328-7768 ▪ info@phenomenex.com
Access your MSDS and digital C of A at **www.phenomenex.com/mysupport. Re-order at www.phenomenex.com/standards**

Certified Reference Material

This product is included in Phenova's ISO/IEC 17025 and ISO Guide 34 Scopes of Accreditation

Catalog No.: AL0-101461
Description: Aroclor 1254
Storage: 4 °C
Provided As: 1 mL in 2 mL Ampoule in Hexane

Lot Number: CL13053
Certification Date: November 29, 2018
Expiration Date: November 30, 2026

Andrea L Gill

Andrea Gill, Certified Reference Materials Manager

Component	CAS #	Certified Value µg/mL	Expanded Uncertainty
Aroclor 1254	11097-69-1	1000	± 0.246%

I09808
Recd. JP
02/24/20

ACCREDITED
Reference Material Producer
Certificate No. 2427.02

phenova
Certified Reference Materials

Manufactured by Phenova, Inc.

Phenova's testing and calibration results are internationally recognized through the ILAC MRA. Phenova is an accredited ISO Guide 34 Reference Material Provider and ISO/IEC 17025 accredited Chemical Testing Laboratory.

ilac-MRA
ACCREDITED
Chemical Testing Laboratory
Certificate No. 2427.03

IL111110613_us

Certificate of Analysis

phenova Certified Reference Materials | A Phenomenex Company

Produced by Phenova
6390 Joyce Drive STE 100, Golden, CO 80403 USA ▪ Tel: 303-940-0033 ▪ Fax: 303-940-0043 ▪ info@phenova.com
Access your Safety Data Sheets and digital Certificates at **www.phenova.com/documents.**

Certified Reference Material

This product is certified in accordance with Phenova's ISO 17034 accreditation and supported by Phenova's ISO/IEC 17025 chemical testing accreditation

Catalog No.: AL0-101468
Description: Aroclor 1221
Storage: 4 °C
Provided As: 1 mL in 2 mL Ampoule in Isooctane

Lot Number: CL14017
Certification Date: August 20, 2019
Expiration Date: August 31, 2027

Andrea L Gill

Andrea Gill, Certified Reference Materials Manager

Component	CAS #	Certified Value µg/mL	Expanded Uncertainty
Aroclor 1221	11104-28-2	1000	± 0.553%

J004466
Rec'd JK
06/18/21

Certificate of Analysis

Produced by Phenova
6390 Joyce Drive STE 100, Golden, CO 80403 USA ▪ Tel: 303-940-0033 ▪ Fax: 303-940-0043 ▪ info@phenova.com
Access your Safety Data Sheets and digital Certificates at www.phenova.com/documents.

1. Quality Document: This Certificate of Analysis has been created in accordance with ISO Guide 31[1] and ISO Guide 35.[2]

2. Quality Standards: Phenova is accredited by A2LA to ISO 17034[3] and ISO/IEC 17025[4] as a producer of Certified Reference Materials and Reference Materials. This ensures that our manufacturing processes have been accredited to and meet strict international standards.

3. Intended Use: The product is manufactured for use in calibration, calibration verification, quantification, identification and other appropriate analytical control applications. The product is intended for routine laboratory analysis and research purposes only. Only trained personnel should handle this product.

4. Handling and Usage Notes: Store according to recommended conditions listed and avoid prolonged exposure to light. Visually inspect the solution inside the ampoule for any un-dissolved material. If particulate is visible, sonicate the unopened ampoule until material is fully dissolved. Dilute as required, use only class A glassware and diluents compatible with all analytes in the mixture. Considerations should be made related to repeated use of the opened product. Once opened, exposure to light, air, heat, objects, and additional transfer vessels may cause evaporation, degradation or contamination resulting in changes in concentration, uncertainty and stability duration. Store opened standards in a clean, tightly capped vessel under the recommended temperature. Appropriate controls, such as the use of additional verification standards should be used to confirm the opened product is fit for purpose under repeated use conditions.

5. Hazardous Situation: The product is intended for use by experienced professional personnel. A Safety Data Sheet (SDS) is available at www.phenova.com/documents.

6. Level of Homogeneity: The product has been certified to guarantee the certified values and their uncertainties at a volume of 2 µL.

7. Certified Value: Certified Value is based upon gravimetric and volumetric preparation using calibrated balances and Class A glassware.

8. Raw Materials and Purity: Phenova reference standard products are prepared from the highest quality starting materials. The purity of this material was verified using an ISO/IEC 17025 methodology.

9. Expanded Uncertainty: The expanded uncertainty (uCRM) as stated is determined in accordance with ISO/IEC Guide 98[5] and ISO Guide 35 incorporating Type A standard uncertainty at a 95% confidence level. The uncertainty contains elements of manufacturing (uM), homogeneity analysis (uH) and long-term stability testing (uLTS). The uncertainty is calculated based on the root-sum-of-squares equation times a coverage factor (k=2).

$$uCRM = k\sqrt{uM^2 + uH^2 + uLTS^2}$$

Transport conditions (short-term stability) have been tested such that there is no contribution to the uncertainty reported. The expanded uncertainty applies to the product as received.

10. Metrological Traceability: The property value (certified value and its uncertainty) are traceable through an unbroken chain of calibration to the SI base unit kg through a NIST traceable weight in accordance with ISO 17034. This is achieved through calibration of balances, verification of weights, use of national methodology for glassware calibration and product homogeneity and stability testing utilizing an ISO/IEC 17025 methodology.

11. Values Obtained During Product Testing: This product is subjected to verification, homogeneity and stability testing using an ISO/IEC 17025 chromatographic methodology. All values obtained during testing meet criteria in accordance with ISO 17034.

12. Period of Validity: The Certified Values, Uncertainties and Expiration Date are based on the unopened product being stored according to the recommended storage condition listed and are guaranteed until the expiration date. This product will be monitored during the period of validity and customers notified of any significant changes in stability.

References:

[1] ISO Guide 31 – Reference Materials – Contents of Certificates and Labels.
[2] ISO Guide 35 – Reference Material – General and Statistical Principles for Certification.
[3] ISO 17034 – General Requirements for the Competence of Reference Material Producers.
[4] ISO/IEC 17025 – General Requirements for the Competence of Testing and Calibration Laboratories.
[5] ISO/IEC Guide 98-3:2008(E) – Uncertainty of Measurement – Part 3: Guide to Expression of Uncertainty in Measurement (GUM: 1995)

Certificate of Analysis

phenova® Certified Reference Materials | A Phenomenex® Company

Produced by Phenova
6390 Joyce Drive STE 100, Golden, CO 80403 USA ▪ Tel: 303-940-0033 ▪ Fax: 303-940-0043 ▪ info@phenova.com
Access your Safety Data Sheets and digital Certificates at **www.phenova.com/documents.**

Certified Reference Material

This product is certified in accordance with Phenova's ISO 17034 accreditation and supported by Phenova's ISO/IEC 17025 chemical testing accreditation

Catalog No.: AL0-101469
Description: Aroclor 1232
Storage: 4 °C
Provided As: 1 mL in 2 mL Ampoule in Isooctane

Lot Number: CL14914
Certification Date: January 31, 2020
Expiration Date: January 31, 2028

Andrea L Gill

Andrea Gill, Certified Reference Materials Manager

Component	CAS #	Certified Value µg/mL	Expanded Uncertainty
Aroclor 1232	11141-16-5	1000	± 0.738%

J006467 JR
Recd
06/18/21

Certificate of Analysis

Produced by Phenova
6390 Joyce Drive STE 100, Golden, CO 80403 USA ▪ Tel: 303-940-0033 ▪ Fax: 303-940-0043 ▪ info@phenova.com
Access your Safety Data Sheets and digital Certificates at www.phenova.com/documents.

1. Quality Document: This Certificate of Analysis has been created in accordance with ISO Guide 31[1] and ISO Guide 35.[2]

2. Quality Standards: Phenova is accredited by A2LA to ISO 17034[3] and ISO/IEC 17025[4] as a producer of Certified Reference Materials and Reference Materials. This ensures that our manufacturing processes have been accredited to and meet strict international standards.

3. Intended Use: The product is manufactured for use in calibration, calibration verification, quantification, identification and other appropriate analytical control applications. The product is intended for routine laboratory analysis and research purposes only. Only trained personnel should handle this product.

4. Handling and Usage Notes: Store according to recommended conditions listed and avoid prolonged exposure to light. Visually inspect the solution inside the ampoule for any un-dissolved material. If particulate is visible, sonicate the unopened ampoule until material is fully dissolved. Dilute as required, use only class A glassware and diluents compatible with all analytes in the mixture. Considerations should be made related to repeated use of the opened product. Once opened, exposure to light, air, heat, objects, and additional transfer vessels may cause evaporation, degradation or contamination resulting in changes in concentration, uncertainty and stability duration. Store opened standards in a clean, tightly capped vessel under the recommended temperature. Appropriate controls, such as the use of additional verification standards should be used to confirm the opened product is fit for purpose under repeated use conditions.

5. Hazardous Situation: The product is intended for use by experienced professional personnel. A Safety Data Sheet (SDS) is available at www.phenova.com/documents.

6. Level of Homogeneity: The product has been certified to guarantee the certified values and their uncertainties at a volume of 2 µL.

7. Certified Value: Certified Value is based upon gravimetric and volumetric preparation using calibrated balances and Class A glassware.

8. Raw Materials and Purity: Phenova reference standard products are prepared from the highest quality starting materials. The purity of this material was verified using an ISO/IEC 17025 methodology.

9. Expanded Uncertainty: The expanded uncertainty (uCRM) as stated is determined in accordance with ISO/IEC Guide 98[5] and ISO Guide 35 incorporating Type A standard uncertainty at a 95% confidence level. The uncertainty contains elements of manufacturing (uM), homogeneity analysis (uH) and long-term stability testing (uLTS). The uncertainty is calculated based on the root-sum-of-squares equation times a coverage factor (k=2).

$$uCRM = k\sqrt{uM^2 + uH^2 + uLTS^2}$$

Transport conditions (short-term stability) have been tested such that there is no contribution to the uncertainty reported. The expanded uncertainty applies to the product as received.

10. Metrological Traceability: The property value (certified value and its uncertainty) are traceable through an unbroken chain of calibration to the SI base unit kg through a NIST traceable weight in accordance with ISO 17034. This is achieved through calibration of balances, verification of weights, use of national methodology for glassware calibration and product homogeneity and stability testing utilizing an ISO/IEC 17025 methodology.

11. Values Obtained During Product Testing: This product is subjected to verification, homogeneity and stability testing using an ISO/IEC17025 chromatographic methodology. All values obtained during testing meet criteria in accordance with ISO 17034.

12. Period of Validity: The Certified Values, Uncertainties and Expiration Date are based on the unopened product being stored according to the recommended storage condition listed and are guaranteed until the expiration date. This product will be monitored during the period of validity and customers notified of any significant changes in stability.

References:

[1] ISO Guide 31 – Reference Materials – Contents of Certificates and Labels.
[2] ISO Guide 35 – Reference Material – General and Statistical Principles for Certification.
[3] ISO 17034 – General Requirements for the Competence of Reference Material Producers.
[4] ISO/IEC 17025 – General Requirements for the Competence of Testing and Calibration Laboratories.
[5] ISO/IEC Guide 98-3:2008(E) – Uncertainty of Measurement – Part 3: Guide to Expression of Uncertainty in Measurement (GUM: 1995)

Certificate of Analysis

phenova | A Phenomenex Company
Certified Reference Materials

Produced by Phenova
6390 Joyce Drive STE 100, Golden, CO 80403 USA ▪ Tel: 303-940-0033 ▪ Fax: 303-940-0043 ▪ info@phenova.com
Access your Safety Data Sheets and digital Certificates at **www.phenova.com/documents.**

Certified Reference Material

This product is certified in accordance with Phenova's ISO 17034 accreditation and supported by Phenova's ISO/IEC 17025 chemical testing accreditation

Catalog No.:	AL0-101470	**Lot Number:**	CL14018
Description:	Aroclor 1242	**Certification Date:**	August 20, 2019
Storage:	4 °C	**Expiration Date:**	August 31, 2027
Provided As:	1 mL in 2 mL Ampoule in Isooctane		

Andrea L Gill

Andrea Gill, Certified Reference Materials Manager

Component	CAS #	Certified Value µg/mL	Expanded Uncertainty
Aroclor 1242	53469-21-9	1000	± 0.553%

J006468
Read JR
06/18/21

ACCREDITED
Reference Material Producer
Certicate No. 2427.02

phenova | A Phenomenex Company
Certified Reference Materials

Phenova is an accredited ISO/IEC 17034 Reference Material Producer and ISO/IEC 17025 accredited Chemical Testing Laboratory.

ACCREDITED
Chemical Testing Laboratory
Certicate No. 2427.03

IL64691018_US

Certificate of Analysis

Produced by Phenova
6390 Joyce Drive STE 100, Golden, CO 80403 USA ▪ Tel: 303-940-0033 ▪ Fax: 303-940-0043 ▪ info@phenova.com
Access your Safety Data Sheets and digital Certificates at www.phenova.com/documents.

1. Quality Document: This Certificate of Analysis has been created in accordance with ISO Guide 31[1] and ISO Guide 35.[2]

2. Quality Standards: Phenova is accredited by A2LA to ISO 17034[3] and ISO/IEC 17025[4] as a producer of Certified Reference Materials and Reference Materials. This ensures that our manufacturing processes have been accredited to and meet strict international standards.

3. Intended Use: The product is manufactured for use in calibration, calibration verification, quantification, identification and other appropriate analytical control applications. The product is intended for routine laboratory analysis and research purposes only. Only trained personnel should handle this product.

4. Handling and Usage Notes: Store according to recommended conditions listed and avoid prolonged exposure to light. Visually inspect the solution inside the ampoule for any un-dissolved material. If particulate is visible, sonicate the unopened ampoule until material is fully dissolved. Dilute as required, use only class A glassware and diluents compatible with all analytes in the mixture. Considerations should be made related to repeated use of the opened product. Once opened, exposure to light, air, heat, objects, and additional transfer vessels may cause evaporation, degradation or contamination resulting in changes in concentration, uncertainty and stability duration. Store opened standards in a clean, tightly capped vessel under the recommended temperature. Appropriate controls, such as the use of additional verification standards should be used to confirm the opened product is fit for purpose under repeated use conditions.

5. Hazardous Situation: The product is intended for use by experienced professional personnel. A Safety Data Sheet (SDS) is available at www.phenova.com/documents.

6. Level of Homogeneity: The product has been certified to guarantee the certified values and their uncertainties at a volume of 2 µL.

7. Certified Value: Certified Value is based upon gravimetric and volumetric preparation using calibrated balances and Class A glassware.

8. Raw Materials and Purity: Phenova reference standard products are prepared from the highest quality starting materials. The purity of this material was verified using an ISO/IEC 17025 methodology.

9. Expanded Uncertainty: The expanded uncertainty (uCRM) as stated is determined in accordance with ISO/IEC Guide 98[5] and ISO Guide 35 incorporating Type A standard uncertainty at a 95% confidence level. The uncertainty contains elements of manufacturing (uM), homogeneity analysis (uH) and long-term stability testing (uLTS). The uncertainty is calculated based on the root-sum-of-squares equation times a coverage factor (k=2).

$$uCRM = k\sqrt{uM^2 + uH^2 + uLTS^2}$$

Transport conditions (short-term stability) have been tested such that there is no contribution to the uncertainty reported. The expanded uncertainty applies to the product as received.

10. Metrological Traceability: The property value (certified value and its uncertainty) are traceable through an unbroken chain of calibration to the SI base unit kg through a NIST traceable weight in accordance with ISO 17034. This is achieved through calibration of balances, verification of weights, use of national methodology for glassware calibration and product homogeneity and stability testing utilizing an ISO/IEC 17025 methodology.

11. Values Obtained During Product Testing: This product is subjected to verification, homogeneity and stability testing using an ISO/IEC17025 chromatographic methodology. All values obtained during testing meet criteria in accordance with ISO 17034.

12. Period of Validity: The Certified Values, Uncertainties and Expiration Date are based on the unopened product being stored according to the recommended storage condition listed and are guaranteed until the expiration date. This product will be monitored during the period of validity and customers notified of any significant changes in stability.

References:

[1] ISO Guide 31 – Reference Materials – Contents of Certificates and Labels.
[2] ISO Guide 35 – Reference Material – General and Statistical Principles for Certification.
[3] ISO 17034 – General Requirements for the Competence of Reference Material Producers.
[4] ISO/IEC 17025 – General Requirements for the Competence of Testing and Calibration Laboratories.
[5] ISO/IEC Guide 98-3:2008(E) – Uncertainty of Measurement – Part 3: Guide to Expression of Uncertainty in Measurement (GUM: 1995)

Certificate of Analysis

phenova® Certified Reference Materials | A Phenomenex® Company

Produced by Phenova
6390 Joyce Drive STE 100, Golden, CO 80403 USA ▪ Tel: 303-940-0033 ▪ Fax: 303-940-0043 ▪ info@phenova.com
Access your Safety Data Sheets and digital Certificates at **www.phenova.com/documents.**

Certified Reference Material

This product is certified in accordance with Phenova's ISO 17034 accreditation and supported by Phenova's ISO/IEC 17025 chemical testing accreditation

Catalog No.:	AL0-101471	**Lot Number:**	CL15384
Description:	Aroclor 1248	**Certification Date:**	June 19, 2020
Storage:	4 °C	**Expiration Date:**	June 30, 2028
Provided As:	1 mL in 2 mL Ampoule in Isooctane		

Andrea L Gill

Andrea Gill, Certified Reference Materials Manager

Component	CAS #	Certified Value µg/mL	Expanded Uncertainty
Aroclor 1248	12672-29-6	1000	± 0.520%

I JJ06469
Recd. JR
06/18/21

Certificate of Analysis

Produced by Phenova
6390 Joyce Drive STE 100, Golden, CO 80403 USA ▪ Tel: 303-940-0033 ▪ Fax: 303-940-0043 ▪ info@phenova.com
Access your Safety Data Sheets and digital Certificates at www.phenova.com/documents.

1. Quality Document: This Certificate of Analysis has been created in accordance with ISO Guide 31[1] and ISO Guide 35.[2]

2. Quality Standards: Phenova is accredited by A2LA to ISO 17034[3] and ISO/IEC 17025[4] as a producer of Certified Reference Materials and Reference Materials. This ensures that our manufacturing processes have been accredited to and meet strict international standards.

3. Intended Use: The product is manufactured for use in calibration, calibration verification, quantification, identification and other appropriate analytical control applications. The product is intended for routine laboratory analysis and research purposes only. Only trained personnel should handle this product.

4. Handling and Usage Notes: Store according to recommended conditions listed and avoid prolonged exposure to light. Visually inspect the solution inside the ampoule for any un-dissolved material. If particulate is visible, sonicate the unopened ampoule until material is fully dissolved. Dilute as required, use only class A glassware and diluents compatible with all analytes in the mixture. Considerations should be made related to repeated use of the opened product. Once opened, exposure to light, air, heat, objects, and additional transfer vessels may cause evaporation, degradation or contamination resulting in changes in concentration, uncertainty and stability duration. Store opened standards in a clean, tightly capped vessel under the recommended temperature. Appropriate controls, such as the use of additional verification standards should be used to confirm the opened product is fit for purpose under repeated use conditions.

5. Hazardous Situation: The product is intended for use by experienced professional personnel. A Safety Data Sheet (SDS) is available at www.phenova.com/documents.

6. Level of Homogeneity: The product has been certified to guarantee the certified values and their uncertainties at a volume of 2 µL.

7. Certified Value: Certified Value is based upon gravimetric and volumetric preparation using calibrated balances and Class A glassware.

8. Raw Materials and Purity: Phenova reference standard products are prepared from the highest quality starting materials. The purity of this material was verified using an ISO/IEC 17025 methodology.

9. Expanded Uncertainty: The expanded uncertainty (uCRM) as stated is determined in accordance with ISO/IEC Guide 98[5] and ISO Guide 35 incorporating Type A standard uncertainty at a 95% confidence level. The uncertainty contains elements of manufacturing (uM), homogeneity analysis (uH) and long-term stability testing (uLTS). The uncertainty is calculated based on the root-sum-of-squares equation times a coverage factor (k=2).

$$uCRM = k\sqrt{uM^2 + uH^2 + uLTS^2}$$

Transport conditions (short-term stability) have been tested such that there is no contribution to the uncertainty reported. The expanded uncertainty applies to the product as received.

10. Metrological Traceability: The property value (certified value and its uncertainty) are traceable through an unbroken chain of calibration to the SI base unit kg through a NIST traceable weight in accordance with ISO 17034. This is achieved through calibration of balances, verification of weights, use of national methodology for glassware calibration and product homogeneity and stability testing utilizing an ISO/IEC 17025 methodology.

11. Values Obtained During Product Testing: This product is subjected to verification, homogeneity and stability testing using an ISO/IEC17025 chromatographic methodology. All values obtained during testing meet criteria in accordance with ISO 17034.

12. Period of Validity: The Certified Values, Uncertainties and Expiration Date are based on the unopened product being stored according to the recommended storage condition listed and are guaranteed until the expiration date. This product will be monitored during the period of validity and customers notified of any significant changes in stability.

References:

[1] ISO Guide 31 – Reference Materials – Contents of Certificates and Labels.
[2] ISO Guide 35 – Reference Material – General and Statistical Principles for Certification.
[3] ISO 17034 – General Requirements for the Competence of Reference Material Producers.
[4] ISO/IEC 17025 – General Requirements for the Competence of Testing and Calibration Laboratories.
[5] ISO/IEC Guide 98-3:2008(E) – Uncertainty of Measurement – Part 3: Guide to Expression of Uncertainty in Measurement (GUM: 1995)

phenomenex
...breaking with tradition

Certificate of Analysis

Phenova Certified Reference Materials are sold by Phenomenex.
411 Madrid Ave., Torrance, CA 90501 USA ▪ Tel: 310-212-0555 ▪ Fax: 310-328-7768 ▪ info@phenomenex.com
Access your MSDS and digital C of A at **www.phenomenex.com/mysupport. Re-order at www.phenomenex.com/standards**

Certified Reference Material

This product is included in Phenova's ISO/IEC 17025 and ISO Guide 34 Scopes of Accreditation

Catalog No.:	AL0-101474	**Lot Number:**	CL11330
Description:	Aroclor 1262	**Certification Date:**	May 15, 2015
Storage:	4 °C	**Expiration Date:**	April 30, 2023
Provided As:	1 mL in 2 mL Ampoule in Isooctane	**Revision Date:**	April 2, 2018

Andrea L Gill

Andrea Gill, Certified Reference Materials Manager

Component	CAS #	Certified Value µg/mL	Expanded Uncertainty
Aroclor 1262	37324-23-5	1000	± 0.516%

J 00647
Rec'd JK
06/18/21

ACCREDITED
Reference Material Producer
Certificate No. 2427.02

phenova
Certified Reference Materials

Manufactured by Phenova, Inc.
Phenova's testing and calibration results are internationally recognized through the ILAC MRA. Phenova is an accredited ISO Guide 34 Reference Material Provider and ISO/IEC 17025 accredited Chemical Testing Laboratory.

ilac-MRA
ACCREDITED
Chemical Testing Laboratory
Certificate No. 2427.03

IL111110613_us

Certificate of Analysis

Phenova Certified Reference Materials are sold by Phenomenex.
411 Madrid Ave., Torrance, CA 90501 USA ▪ Tel: 310-212-0555 ▪ Fax: 310-328-7768 ▪ info@phenomenex.com
Access your MSDS and digital C of A at www.phenomenex.com/mysupport. Re-order at www.phenomenex.com/standards

1. Quality Document: This Certificate of Analysis has been created in accordance with ISO Guide 31[1] and ISO Guide 35.[2]

2. Quality Standards: Phenova is accredited by A2LA to ISO Guide 34[3] and ISO/IEC 17025[4] as a producer of Certified Reference Materials and Reference Materials. This ensures that our manufacturing processes have been accredited to and meet strict international standards.

3. Intended Use: The product is manufactured for use in the calibration and calibration verification of chromatographic instrumentation performed in routine laboratory analysis.

4. Instruction: Visually inspect the solution inside the ampoule for any un-dissolved material. If particulate is visible, sonicate the unopened ampoule until material is fully dissolved. Dilute as required, use only class A glassware and diluents compatible with all certified analytes in the mixture.

5. Hazardous Situation: The product is intended for use by experienced professional personnel. A Material Safety Data Sheet (MSDS) is available at www.phenomenex.com/mysupport.

6. Level of Homogeneity: The product has been certified to guarantee the certified values and their uncertainties at a volume of 2 µL.

7. Certified Value: Certified Value is based upon gravimetric and volumetric preparation using calibrated balances and Class A glassware.

8. Raw Materials and Purity: Phenova reference standard products are prepared from the highest quality starting materials. The purity of this material was verified using an ISO/IEC 17025 methodology.

9. Expanded Uncertainty: The expanded uncertainty (uCRM) as stated is determined in accordance with ISO/IEC Guide 98[5] and ISO Guide 35 incorporating Type A standard uncertainty at a 95% confidence level. The uncertainty contains elements of manufacturing (uM), homogeneity analysis (uH) and long-term stability testing (uLTS). The uncertainty is calculated based on the root-sum-of-squares equation times a coverage factor (k=2).

   $$uCRM = k\sqrt{uM^2 + uH^2 + uLTS^2}$$

   Transport conditions (short-term stability) have been tested such that there is no contribution to the uncertainty reported. The expanded uncertainty applies to the product as received.

10. Metrological Traceability: The property value (certified value and its uncertainty) are traceable through an unbroken chain of calibration to the SI base unit kg through a NIST traceable weight in accordance with ISO Guide 34. This is achieved through calibration of balances, verification of weights, use of national methodology for glassware calibration and product homogeneity and stability testing utilizing an ISO/IEC 17025 methodology.

11. Values Obtained During Product Testing: This product is subjected to verification, homogeneity and stability testing using an ISO/IEC 17025 chromatographic methodology. All values obtained during testing meet criteria in accordance with ISO Guide 34.

12. Period of Validity: The Certified Values and their uncertainties are guaranteed until the expiration date. This product will be monitored during the period of validity and customers notified of any significant changes in stability.

References:

[1] ISO Guide 31:2000(E) – Reference Materials – Contents of Certificates and Labels.
[2] ISO Guide 35:2006(E) – Reference Material – General and Statistical Principles for Certification.
[3] ISO Guide 34:2009(E) – General Requirements for the Competence of Reference Material Producers.
[4] ISO/IEC 17025:2005(E) – General Requirements for the Competence of Testing and Calibration Laboratories.
[5] ISO/IEC Guide 98-3:2008(E) – Uncertainty of Measurement – Part 3: Guide to Expression of Uncertainty in Measurement (GUM: 1995)

ACCREDITED
Reference Material Producer
Certificate No. 2427.02

phenova®
Certified Reference Materials

Manufactured by Phenova, Inc.
Phenova's testing and calibration results are internationally recognized through the ILAC MRA. Phenova is an accredited ISO Guide 34 Reference Material Provider and ISO/IEC 17025 accredited Chemical Testing Laboratory.

ilac-MRA
ACCREDITED
Chemical Testing Laboratory
Certificate No. 2427.03

IL111/0613_US

phenomenex
...breaking with tradition

Certificate of Analysis

Phenova Certified Reference Materials are sold by Phenomenex.
411 Madrid Ave., Torrance, CA 90501 USA ▪ Tel: 310-212-0555 ▪ Fax: 310-328-7768 ▪ info@phenomenex.com
Access your MSDS and digital C of A at **www.phenomenex.com/mysupport. Re-order at www.phenomenex.com/standards**

Certified Reference Material

This product is included in Phenova's ISO/IEC 17025 and ISO Guide 34 Scopes of Accreditation

Catalog No.:	AL0-101475	**Lot Number:**	CL11331
Description:	Aroclor 1268	**Certification Date:**	May 15, 2015
Storage:	4 °C	**Expiration Date:**	April 30, 2023
Provided As:	1 mL in 2 mL Ampoule in Isooctane	**Revision Date:**	April 2, 2018

Andrea L Gill

Andrea Gill, Certified Reference Materials Manager

Component	CAS #	Certified Value µg/mL	Expanded Uncertainty
Aroclor 1268	11100-14-4	1000	± 0.516%

J006472
Rec'd
06/18/21

phenova
Certified Reference Materials

Manufactured by Phenova, Inc.

Phenova's testing and calibration results are internationally recognized through the ILAC MRA. Phenova is an accredited ISO Guide 34 Reference Material Provider and ISO/IEC 17025 accredited Chemical Testing Laboratory.

ACCREDITED
Reference Material Producer
Certificate No. 2427.02

ilac-MRA
ACCREDITED
Chemical Testing Laboratory
Certificate No. 2427.03

IL111110613_US

Certificate of Analysis

Phenova Certified Reference Materials are sold by Phenomenex.
411 Madrid Ave., Torrance, CA 90501 USA ▪ Tel: 310-212-0555 ▪ Fax: 310-328-7768 ▪ info@phenomenex.com
Access your MSDS and digital C of A at www.phenomenex.com/mysupport. Re-order at www.phenomenex.com/standards

1. Quality Document: This Certificate of Analysis has been created in accordance with ISO Guide 31[1] and ISO Guide 35.[2]

2. Quality Standards: Phenova is accredited by A2LA to ISO Guide 34[3] and ISO/IEC 17025[4] as a producer of Certified Reference Materials and Reference Materials. This ensures that our manufacturing processes have been accredited to and meet strict international standards.

3. Intended Use: The product is manufactured for use in the calibration and calibration verification of chromatographic instrumentation performed in routine laboratory analysis.

4. Instruction: Visually inspect the solution inside the ampoule for any un-dissolved material. If particulate is visible, sonicate the unopened ampoule until material is fully dissolved. Dilute as required, use only class A glassware and diluents compatible with all certified analytes in the mixture.

5. Hazardous Situation: The product is intended for use by experienced professional personnel. A Material Safety Data Sheet (MSDS) is available at www.phenomenex.com/mysupport.

6. Level of Homogeneity: The product has been certified to guarantee the certified values and their uncertainties at a volume of 2 µL.

7. Certified Value: Certified Value is based upon gravimetric and volumetric preparation using calibrated balances and Class A glassware.

8. Raw Materials and Purity: Phenova reference standard products are prepared from the highest quality starting materials. The purity of this material was verified using an ISO/IEC 17025 methodology.

9. Expanded Uncertainty: The expanded uncertainty (uCRM) as stated is determined in accordance with ISO/IEC Guide 98[5] and ISO Guide 35 incorporating Type A standard uncertainty at a 95% confidence level. The uncertainty contains elements of manufacturing (uM), homogeneity analysis (uH) and long-term stability testing (uLTS). The uncertainty is calculated based on the root-sum-of-squares equation times a coverage factor (k=2).

   $$uCRM = k\sqrt{uM^2 + uH^2 + uLTS^2}$$

   Transport conditions (short-term stability) have been tested such that there is no contribution to the uncertainty reported. The expanded uncertainty applies to the product as received.

10. Metrological Traceability: The property value (certified value and its uncertainty) are traceable through an unbroken chain of calibration to the SI base unit kg through a NIST traceable weight in accordance with ISO Guide 34. This is achieved through calibration of balances, verification of weights, use of national methodology for glassware calibration and product homogeneity and stability testing utilizing an ISO/IEC 17025 methodology.

11. Values Obtained During Product Testing: This product is subjected to verification, homogeneity and stability testing using an ISO/IEC 17025 chromatographic methodology. All values obtained during testing meet criteria in accordance with ISO Guide 34.

12. Period of Validity: The Certified Values and their uncertainties are guaranteed until the expiration date. This product will be monitored during the period of validity and customers notified of any significant changes in stability.

References:

[1] ISO Guide 31:2000(E) – Reference Materials – Contents of Certificates and Labels.
[2] ISO Guide 35:2006(E) – Reference Material – General and Statistical Principles for Certification.
[3] ISO Guide 34:2009(E) – General Requirements for the Competence of Reference Material Producers.
[4] ISO/IEC 17025:2005(E) – General Requirements for the Competence of Testing and Calibration Laboratories.
[5] ISO/IEC Guide 98-3:2008(E) – Uncertainty of Measurement – Part 3: Guide to Expression of Uncertainty in Measurement (GUM: 1995)

ACCREDITED
Reference Material Producer
Certificate No. 2427.02

phenova®
Certified Reference Materials

Manufactured by Phenova, Inc.
Phenova's testing and calibration results are internationally recognized through the ILAC MRA. Phenova is an accredited ISO Guide 34 Reference Material Provider and ISO/IEC 17025 accredited Chemical Testing Laboratory.

ilac-MRA
ACCREDITED
Chemical Testing Laboratory
Certificate No. 2427.03

Certificate of Analysis

Agilent

Aroclor 1016 Solution

Product Number:	PP-282			**Page:**	1 of 1
Lot Number:	CR-0761	**Lot Issue Date:**	28-Feb-2017	**Expiration Date:**	31-Mar-2025

This ISO Guide 34 Reference Material (RM) was manufactured and verified in accordance with ULTRA's ISO 9001 registered quality system, and the analyte concentrations were verified by our ISO 17025 accredited laboratory. The true value and uncertainty value at the 95% confidence level for each analyte, determined gravimetrically, is listed below.

Analyte	CAS#	Analyte Lot	True Value
Aroclor 1016	012674-11-2	NT01016	100.2 ± 0.5 µg/mL

Matrix: isooctane (2,2,4-trimethylpentane)

Storage: Store at Room Temperature (15° to 30°C).

K1254 JR
Recd
02/05/22

ULTRA uses balances calibrated with weights traceable to NIST in compliance with ANSI/NCSL Z-540-1 and ISO 9001, and calibrated Class A glassware in the manufacturing of these standards.

John Russo
President

Monica Bourgeois
Director of QA/RA

ANAB ACCREDITED ISO/IEC 17025 TESTING LABORATORY

ISO 9001
Registered
TUV USA, Inc.

Agilent

Certificate of Analysis

Product Name: Aroclor 1260 Standard

Product Number: PP-362-1 **Lot Issue Date:** 20-Jan-2021

Lot Number: 0006582048 **Expiration Date:** 28-Feb-2025

Description:
This analytical reference material (RM) was manufactured and verified in accordance with an ISO 9001 registered quality system and analyte concentrations were verified by an ISO 17025 accredited laboratory. The concentration and uncertainty value at the 95% confidence level for each analyte, determined gravimetrically, is listed below.

Analyte	CAS#	Analyte Lot	Concentration ± Uncertainty
Aroclor 1260	011096-82-5	NT01023	100.4 ± 0.5 µg/mL

Matrix: isooctane (2,2,4-trimethylpentane)

K 1255

Storage Conditions: Store at Room Temperature (15° to 30°C).

Traceability:
The balances used for these measurements are calibrated with weights traceable to NIST in compliance with ANSI/NCSL Z540.3, ISO 9001, ISO 17025, and ISO 17034. Calibrated Class A glassware is used for volumetric measurements. Thermometers are calibrated against a NIST traceable thermometer in accordance with NIST Special Publication 1088.

Homogeneity:
This RM was unitized according to an in-house procedure and is guaranteed to be homogeneous. There is no minimum sub-sample size required.

Intended Use:
This RM is intended for the preparation of working reference samples for use in routine laboratory analyses, calibration of instruments, validation of analytical methods, assessments of measurement methods, and continuing calibration verification.

Instructions for Use:
Sample aliquots for analysis should be withdrawn at 20°C to 25°C immediately after opening the container and should be processed without delay for the certified values to be valid within the stated uncertainties.

Hazards:
Refer to the Safety Data Sheet on www.agilent.com for information regarding this RM.

Expiration of Certification:
The certification of this RM is valid until the expiration date specified above, provided the RM is handled and stored in accordance with the instructions given in this certificate. This certification is nullified if the RM is damaged, contaminated, or otherwise modified.

Maintenance of Certification:
If substantive changes are noted that affect the certification before the expiration of this certificate, Agilent will notify the purchaser.

Sample lot approver:

M Bourgeois

Monica Bourgeois
QMS Representative

ANAB ACCREDITED ISO 17034 REFERENCE MATERIAL PRODUCER

ISO 17034 Cert
No. AR-1936

RM was produced in accordance with TUV USA Inc registered ISO 9001 Quality Management System. Cert # 56 100 18560026
Page: 1 of 1

www.agilent.com/quality/
CSD-QA-015.1

ANAB ACCREDITED ISO/IEC 17025 TESTING LABORATORY

ISO 17025 Cert
No. AT-1937

Agilent

Certificate of Analysis
ISO Guide 34

Aroclor 1242 Solution

Product Number: PP-312 **Page:** 1 of 1

Lot Number: CS-6293 **Lot Issue Date:** 04-Jan-2019 **Expiration Date:** 31-Jan-2023

This ISO Guide 34 Reference Material (RM) was manufactured and verified in accordance with Agilent's ISO 9001 registered quality system, and the analyte concentrations were verified by our ISO 17025 accredited laboratory. The true value and uncertainty value at the 95% confidence level for each analyte, determined gravimetrically, is listed below.

Analyte	CAS#	Analyte Lot	True Value
Aroclor 1242	053469-21-9	NT01020	100.4 ± 0.5 µg/mL

Matrix: isooctane (2,2,4-trimethylpentane)

Storage: Store at Room Temperature (15° to 30°C).

K1256

Agilent uses balances calibrated with weights traceable to NIST in compliance with ANSI/NCSL Z-540-1 and ISO 9001, and calibrated Class A glassware in the manufacturing of these standards.

Monica Bourgeois
QMS Representative

ANAB ACCREDITED ISO GUIDE 34 REFERENCE MATERIAL PRODUCER
ISO Guide 34 Cert No. AR-1936

Produced in accordance with TUV USA Inc 56 100 18560026 registered ISO 9001 Quality Management System

ANAB ACCREDITED ISO/IEC 17025 TESTING LABORATORY
ISO17025 Cert No. AT-1937

ISO 17034

Agilent
Trusted Answers

Reference Material Certificate

Product Name:	Aroclor 1248 Standard	**Lot Number:**	0006626997
Product Number:	PP-342-1	**Lot Issue Date:**	17-Aug-2021
Storage Conditions:	Store at Room Temperature (15° to 30°C).	**Expiration Date:**	30-Sep-2025

Component Name	CERTIFIED VALUES Concentration		Expanded Uncertainty	CAS#	Analyte Lot
Aroclor 1248	100.3	±	0.5 µg/mL	012672-29-6	NT01582

Matrix: isooctane (2,2,4-trimethylpentane)

K1257

Description:
This document is prepared in accordance with ISO 17034 and Guide 31. This analytical reference material standard was manufactured and verified in accordance with an ISO 9001 registered quality system and analyte concentrations were verified by an ISO 17025 accredited laboratory. The concentration and uncertainty value at the 95% confidence level for each analyte, determined gravimetrically, is listed above.

Traceability:
The balances used for these measurements are calibrated with weights traceable to NIST in compliance with ANSI/NCSL Z540.3, ISO 9001, ISO 17025, and ISO 17034. Calibrated Class A glassware is used for volumetric measurements. Thermometers are calibrated against a NIST traceable thermometer in accordance with NIST Special Publication 1088.

Homogeneity:
This analytical reference standard was unitized according to an in-house procedure and is guaranteed to be homogeneous. There is no minimum sub-sample size required.

Instructions for Use:
Sample aliquots for analysis should be withdrawn at 20°C to 25°C immediately after opening the container and should be processed without delay for the certified values to be valid within the stated uncertainties.

Safety:
Refer to the Safety Data Sheet on www.agilent.com for information regarding this analytical reference material.

Intended Use:
This analytical reference standard is intended for the preparation of working reference samples for use in routine laboratory analyses, calibration of instruments, validation of analytical methods, assessments of measurement methods, and continuing calibration verification.

Expiration of Certification:
The certification of this analytical reference standard is valid until the expiration date specified above, provided the material is handled and stored in accordance with the instructions given in this certificate. This certification is nullified if the material is damaged, contaminated, or otherwise modified.

Certificate of Analysis

Agilent

Aroclor 1254 Solution

Product Number: PP-352 **Page:** 1 of 1

Lot Number: CS-2321 **Lot Issue Date:** 04-May-2018 **Expiration Date:** 31-May-2026

This ISO Guide 34 Reference Material (RM) was manufactured and verified in accordance with ULTRA's ISO 9001 registered quality system, and the analyte concentrations were verified by our ISO 17025 accredited laboratory. The true value and uncertainty value at the 95% confidence level for each analyte, determined gravimetrically, is listed below.

Analyte	CAS#	Analyte Lot	True Value
Aroclor 1254	011097-69-1	RM00922	100.4 ± 0.5 µg/mL

Matrix: isooctane (2,2,4-trimethylpentane)

Storage: Store at Room Temperature (15° to 30°C).

K1258

ULTRA uses balances calibrated with weights traceable to NIST in compliance with ANSI/NCSL Z-540-1 and ISO 9001, and calibrated Class A glassware in the manufacturing of these standards.

John Russo
President

Monica Bourgeois
Director of QA/RA

ANAB ACCREDITED ISO/IEC 17025 TESTING LABORATORY

ISO 9001
Registered
TUV USA, Inc.

Agilent

Certificate of Analysis

Product Name: Aroclor 1221 Standard

Product Number: PP-292-1 **Lot Issue Date:** 28-Apr-2020

Lot Number: 0006535333 **Expiration Date:** 31-May-2024

Description:

This analytical reference material (RM) was manufactured and verified in accordance with an ISO 9001 registered quality system, and analyte concentrations were verified by an ISO 17025 accredited laboratory. The concentration and uncertainty value at the 95% confidence level for each analyte, determined gravimetrically, is listed below.

Analyte	CAS#	Analyte Lot	Concentration ± Uncertainty
Aroclor 1221	011104-28-2	RM04278	100.2 ± 0.5 µg/mL

Matrix: isooctane (2,2,4-trimethylpentane)

Storage Conditions: Store at Room Temperature (15° to 30°C).

K1259

Traceability:

The balances used for these measurements are calibrated with weights traceable to NIST in compliance with ANSI/NCSL Z540.3, ISO 9001, ISO 17025, and ISO 17034. Calibrated Class A glassware is used for volumetric measurements. Thermometers are calibrated against a NIST traceable thermometer in accordance with NIST Special Publication 1088.

Homogeneity:

This RM was unitized according to an in-house procedure and is guaranteed to be homogeneous. There is no minimum sub-sample size required.

Intended Use:

This RM is intended for the preparation of working reference samples for use in routine laboratory analyses, calibration of instruments, validation of analytical methods, assessments of measurement methods, and continuing calibration verification.

Instructions for Use:

Sample aliquots for analysis should be withdrawn at 20°C to 25°C immediately after opening the container and should be processed without delay for the certified values to be valid within the stated uncertainties.

Hazards:

Refer to the Safety Data Sheet on www.agilent.com for information regarding this RM.

Expiration of Certification:

The certification of this RM is valid until the expiration date specified above, provided the RM is handled and stored in accordance with the instructions given in this certificate. This certification is nullified if the RM is damaged, contaminated, or otherwise modified.

Maintenance of Certification:

If substantive changes are noted that affect the certification before the expiration of this certificate, Agilent will notify the purchaser.

Sample lot approver:

M Bourgeois

Monica Bourgeois
QMS Representative

ANAB ACCREDITED ISO 17034 REFERENCE MATERIAL PRODUCER

ISO 17034 Cert No. AR-1936

RM was produced in accordance with TUV USA Inc registered ISO 9001 Quality Management System. Cert # 56 100 18560026

www.agilent.com/quality/
CSD-QA-015.1

ANAB ACCREDITED ISO/IEC 17025 TESTING LABORATORY

ISO 17025 Cert No. AT-1937

250 Smith Street North Kingstown, Rhode Island 02852 www.agilent.com/quality

Agilent

Certificate of Analysis
ISO 17034

Aroclor 1262 Standard

Product Number: PP-372-1 **Page:** 1 of 1

Lot Number: 0006499800 **Lot Issue Date:** 04-Nov-2019 **Expiration Date:** 30-Nov-2023

This ISO 17034 Reference Material (RM) was manufactured and verified in accordance with Agilent Technologies ISO 9001 registered quality system. A review of the gravimetric preparation data by our ISO 17025 accredited laboratory serves to verify the concentration of each analyte. The true value and uncertainty value at the 95% confidence level for each analyte, determined gravimetrically, is listed below.

Analyte	CAS#	Analyte Lot	True Value
Aroclor 1262	037324-23-5	RM14263	100.0 ± 0.5 µg/mL

Matrix: isooctane (2,2,4-trimethylpentane)

Storage: Store at Room Temperature (15° to 30°C).

K1260

Agilent uses balances calibrated with weights traceable to NIST in compliance with ANSI/NCSL Z-540-1 and ISO 9001, and calibrated Class A glassware in the manufacturing of these standards.

Monica Bourgeois
QMS Representative

ANAB ACCREDITED ISO 17034 REFERENCE MATERIAL PRODUCER
ISO 17034 Cert No. AR-1936

Produced in accordance with TUV USA Inc 56 100 18560026 registered ISO 9001 Quality Management System

ANAB ACCREDITED ISO/IEC 17025 TESTING LABORATORY
ISO 17025 Cert No. AT-1937

Agilent

Certificate of Analysis
ISO 17034

Aroclor 1232 Standard

Product Number: PP-302-1 **Page:** 1 of 1

Lot Number: CF-2197A **Lot Issue Date:** 05-Jul-2016 **Expiration Date:** 31-Aug-2023

This ISO 17034 Reference Material (RM) was manufactured and verified in accordance with Agilent's ISO 9001 registered quality system, and the analyte concentrations were verified by our ISO 17025 accredited laboratory. The true value and uncertainty value at the 95% confidence level for each analyte, determined gravimetrically, is listed below.

Analyte	CAS#	Analyte Lot	True Value
Aroclor 1232	011141-16-5	NT01717	100.4 ± 0.5 µg/mL

Matrix: isooctane (2,2,4-trimethylpentane)

Storage: Store at Room Temperature (15° to 30°C).

K1261

Agilent uses balances calibrated with weights traceable to NIST in compliance with ANSI/NCSL Z-540-1 and ISO 9001, and calibrated Class A glassware in the manufacturing of these standards.

Monica Bourgeois
QMS Representative

ANAB ACCREDITED ISO GUIDE 34 REFERENCE MATERIAL PRODUCER
ISO 17034 Cert No. AR-1936

Produced in accordance with TUV USA Inc 56 100 18560026 registered ISO 9001 Quality Management System

ANAB ACCREDITED ISO/IEC 17025 TESTING LABORATORY
ISO17025 Cert No. AT-1937

Agilent

Certificate of Analysis

Product Name: Aroclor 1268 Standard

Product Number: PP-382-1 **Lot Issue Date:** 09-Feb-2021

Lot Number: 0006587800 **Expiration Date:** 31-Mar-2029

Description:
This analytical reference material (RM) was manufactured and verified in accordance with an ISO 9001 registered quality system and analyte concentrations were verified by an ISO 17025 accredited laboratory. The concentration and uncertainty value at the 95% confidence level for each analyte, determined gravimetrically, is listed below.

Analyte	CAS#	Analyte Lot	Concentration ± Uncertainty
Aroclor 1268	011100-14-4	RM00937	100.0 ± 0.5 µg/mL

Matrix: isooctane (2,2,4-trimethylpentane)

Storage Conditions: Store at Room Temperature (15° to 30°C).

K1262

Traceability:
The balances used for these measurements are calibrated with weights traceable to NIST in compliance with ANSI/NCSL Z540.3, ISO 9001, ISO 17025, and ISO 17034. Calibrated Class A glassware is used for volumetric measurements. Thermometers are calibrated against a NIST traceable thermometer in accordance with NIST Special Publication 1088.

Homogeneity:
This RM was unitized according to an in-house procedure and is guaranteed to be homogeneous. There is no minimum sub-sample size required.

Intended Use:
This RM is intended for the preparation of working reference samples for use in routine laboratory analyses, calibration of instruments, validation of analytical methods, assessments of measurement methods, and continuing calibration verification.

Instructions for Use:
Sample aliquots for analysis should be withdrawn at 20°C to 25°C immediately after opening the container and should be processed without delay for the certified values to be valid within the stated uncertainties.

Hazards:
Refer to the Safety Data Sheet on www.agilent.com for information regarding this RM.

Expiration of Certification:
The certification of this RM is valid until the expiration date specified above, provided the RM is handled and stored in accordance with the instructions given in this certificate. This certification is nullified if the RM is damaged, contaminated, or otherwise modified.

Maintenance of Certification:
If substantive changes are noted that affect the certification before the expiration of this certificate, Agilent will notify the purchaser.

Sample lot approver:

M Bourgeois

Monica Bourgeois
QMS Representative

ANAB ACCREDITED ISO 17034 REFERENCE MATERIAL PRODUCER

ISO 17034 Cert
No. AR-1936

RM was produced in accordance with TUV USA Inc registered ISO 9001 Quality Management System. Cert # 56 100 18560026
Page: 1 of 1

www.agilent.com/quality/
CSD-QA-015.1

ANAB ACCREDITED ISO/IEC 17025 TESTING LABORATORY

ISO 17025 Cert
No. AT-1937

Certificate of Analysis

Phenova Certified Reference Materials are sold by Phenomenex.
411 Madrid Ave., Torrance, CA 90501 USA ▪ Tel: 310-212-0555 ▪ Fax: 310-328-7768 ▪ info@phenomenex.com
Access your MSDS and digital C of A at **www.phenomenex.com/mysupport. Re-order at www.phenomenex.com/standards**

Certified Reference Material

This product is included in Phenova's ISO/IEC 17025 and ISO Guide 34 Scopes of Accreditation

Catalog No.: AL0-101467
Description: Aroclor 1016
Storage: 4 °C
Provided As: 1 mL in 2 mL Ampoule in Isooctane

Lot Number: CL12975
Certification Date: November 19, 2018
Expiration Date: October 31, 2026

Andrea L Gill

Andrea Gill, Certified Reference Materials Manager

Component	CAS #	Certified Value µg/mL	Expanded Uncertainty
Aroclor 1016	12674-11-2	1000	± 0.553%

K5829

ACCREDITED
Reference Material Producer
Certificate No. 2427.02

phenova®
Certified Reference Materials

Manufactured by Phenova, Inc.
Phenova's testing and calibration results are internationally recognized through the ILAC MRA. Phenova is an accredited ISO Guide 34 Reference Material Provider and ISO/IEC 17025 accredited Chemical Testing Laboratory.

ilac-MRA ACCREDITED
Chemical Testing Laboratory
Certificate No. 2427.03

IL11110613_us

Certificate of Analysis

phenomenex
breaking with tradition

Phenova Certified Reference Materials are sold by Phenomenex.
411 Madrid Ave., Torrance, CA 90501 USA ▪ Tel: 310-212-0555 ▪ Fax: 310-328-7768 ▪ info@phenomenex.com
Access your MSDS and digital C of A at www.phenomenex.com/mysupport. Re-order at www.phenomenex.com/standards

1. Quality Document: This Certificate of Analysis has been created in accordance with ISO Guide 31[1] and ISO Guide 35.[2]

2. Quality Standards: Phenova is accredited by A2LA to ISO Guide 34[3] and ISO/IEC 17025[4] as a producer of Certified Reference Materials and Reference Materials. This ensures that our manufacturing processes have been accredited to and meet strict international standards.

3. Intended Use: The product is manufactured for use in the calibration and calibration verification of chromatographic instrumentation performed in routine laboratory analysis.

4. Instruction: Visually inspect the solution inside the ampoule for any un-dissolved material. If particulate is visible, sonicate the unopened ampoule until material is fully dissolved. Dilute as required, use only class A glassware and diluents compatible with all certified analytes in the mixture.

5. Hazardous Situation: The product is intended for use by experienced professional personnel. A Material Safety Data Sheet (MSDS) is available at www.phenomenex.com/mysupport.

6. Level of Homogeneity: The product has been certified to guarantee the certified values and their uncertainties at a volume of 2 µL.

7. Certified Value: Certified Value is based upon gravimetric and volumetric preparation using calibrated balances and Class A glassware.

8. Raw Materials and Purity: Phenova reference standard products are prepared from the highest quality starting materials. The purity of this material was verified using an ISO/IEC 17025 methodology.

9. Expanded Uncertainty: The expanded uncertainty (uCRM) as stated is determined in accordance with ISO/IEC Guide 98[5] and ISO Guide 35 incorporating Type A standard uncertainty at a 95% confidence level. The uncertainty contains elements of manufacturing (uM), homogeneity analysis (uH) and long-term stability testing (uLTS). The uncertainty is calculated based on the root-sum-of-squares equation times a coverage factor (k=2).

   $$uCRM = k\sqrt{uM^2 + uH^2 + uLTS^2}$$

   Transport conditions (short-term stability) have been tested such that there is no contribution to the uncertainty reported. The expanded uncertainty applies to the product as received.

10. Metrological Traceability: The property value (certified value and its uncertainty) are traceable through an unbroken chain of calibration to the SI base unit kg through a NIST traceable weight in accordance with ISO Guide 34. This is achieved through calibration of balances, verification of weights, use of national methodology for glassware calibration and product homogeneity and stability testing utilizing an ISO/IEC 17025 methodology.

11. Values Obtained During Product Testing: This product is subjected to verification, homogeneity and stability testing using an ISO/IEC 17025 chromatographic methodology. All values obtained during testing meet criteria in accordance with ISO Guide 34.

12. Period of Validity: The Certified Values and their uncertainties are guaranteed until the expiration date. This product will be monitored during the period of validity and customers notified of any significant changes in stability.

References:

[1] ISO Guide 31:2000(E) – Reference Materials – Contents of Certificates and Labels.
[2] ISO Guide 35:2006(E) – Reference Material – General and Statistical Principles for Certification.
[3] ISO Guide 34:2009(E) – General Requirements for the Competence of Reference Material Producers.
[4] ISO/IEC 17025:2005(E) – General Requirements for the Competence of Testing and Calibration Laboratories.
[5] ISO/IEC Guide 98-3:2008(E) – Uncertainty of Measurement – Part 3: Guide to Expression of Uncertainty in Measurement (GUM: 1995)

ACCREDITED
Reference Material Producer
Certificate No. 2427.02

phenova®
Certified Reference Materials

Manufactured by Phenova, Inc.
Phenova's testing and calibration results are internationally recognized through the ILAC MRA. Phenova is an accredited ISO Guide 34 Reference Material Provider and ISO/IEC 17025 accredited Chemical Testing Laboratory.

ilac-MRA
ACCREDITED
Chemical Testing Laboratory
Certificate No. 2427.03

IL111106013_US

Certificate of Analysis

phenova Certified Reference Materials | A Phenomenex Company

Produced by Phenova
6390 Joyce Drive STE 100, Golden, CO 80403 USA ▪ Tel: 303-940-0033 ▪ Fax: 303-940-0043 ▪ info@phenova.com
Access your Safety Data Sheets and digital Certificates at **www.phenova.com/documents.**

Certified Reference Material

This product is certified in accordance with Phenova's ISO 17034 accreditation and supported by Phenova's ISO/IEC 17025 chemical testing accreditation

Catalog No.:	AL0-101462	**Lot Number:**	CL18021
Description:	Aroclor 1260	**Certification Date:**	February 14, 2022
Storage:	4 °C	**Expiration Date:**	February 28, 2030
Provided As:	1 mL in 2 mL Ampoule in Hexane		

Andrea L Gill

Andrea Gill, Certified Reference Materials Manager

Component	CAS #	Certified Value µg/mL	Expanded Uncertainty
Aroclor 1260	11096-82-5	1000	± 0.553%

K005830

ACCREDITED
Reference Material Producer
Certicate No. 2427.02

phenova Certified Reference Materials | A Phenomenex Company

Phenova is an accredited ISO/IEC 17034 Reference Material Producer and ISO/IEC 17025 accredited Chemical Testing Laboratory.

ACCREDITED
Chemical Testing Laboratory
Certicate No. 2427.03

Certificate of Analysis

Produced by Phenova
6390 Joyce Drive STE 100, Golden, CO 80403 USA ▪ Tel: 303-940-0033 ▪ Fax: 303-940-0043 ▪ info@phenova.com
Access your Safety Data Sheets and digital Certificates at **www.phenova.com/documents.**

1. Quality Document: This Certificate of Analysis has been created in accordance with ISO Guide 31[1] and ISO Guide 35.[2]

2. Quality Standards: Phenova is accredited by A2LA to ISO 17034[3] and ISO/IEC 17025[4] as a producer of Certified Reference Materials and Reference Materials. This ensures that our manufacturing processes have been accredited to and meet strict international standards.

3. Intended Use: The product is manufactured for use in calibration, calibration verification, quantification, identification and other appropriate analytical control applications. The product is intended for routine laboratory analysis and research purposes only. Only trained personnel should handle this product.

4. Handling and Usage Notes: Store according to recommended conditions listed and avoid prolonged exposure to light. Visually inspect the solution inside the ampoule for any un-dissolved material. If particulate is visible, sonicate the unopened ampoule until material is fully dissolved. Dilute as required, use only class A glassware and diluents compatible with all analytes in the mixture. Considerations should be made related to repeated use of the opened product. Once opened, exposure to light, air, heat, objects, and additional transfer vessels may cause evaporation, degradation or contamination resulting in changes in concentration, uncertainty and stability duration. Store opened standards in a clean, tightly capped vessel under the recommended temperature. Appropriate controls, such as the use of additional verification standards should be used to confirm the opened product is fit for purpose under repeated use conditions.

5. Hazardous Situation: The product is intended for use by experienced professional personnel. A Safety Data Sheet (SDS) is available at www.phenova.com/documents.

6. Level of Homogeneity: The product has been certified to guarantee the certified values and their uncertainties at a volume of 2 µL.

7. Certified Value: Certified Value is based upon gravimetric and volumetric preparation using calibrated balances and Class A glassware.

8. Raw Materials and Purity: Phenova reference standard products are prepared from the highest quality starting materials. The purity of this material was verified using an ISO/IEC 17025 methodology.

9. Expanded Uncertainty: The expanded uncertainty (uCRM) as stated is determined in accordance with ISO/IEC Guide 98[5] and ISO Guide 35 incorporating Type A standard uncertainty at a 95% confidence level. The uncertainty contains elements of manufacturing (uM), homogeneity analysis (uH) and long-term stability testing (uLTS). The uncertainty is calculated based on the root-sum-of-squares equation times a coverage factor (k=2).

$$uCRM = k\sqrt{uM^2 + uH^2 + uLTS^2}$$

   Transport conditions (short-term stability) have been tested such that there is no contribution to the uncertainty reported. The expanded uncertainty applies to the product as received.

10. Metrological Traceability: The property value (certified value and its uncertainty) are traceable through an unbroken chain of calibration to the SI base unit kg through a NIST traceable weight in accordance with ISO 17034. This is achieved through calibration of balances, verification of weights, use of national methodology for glassware calibration and product homogeneity and stability testing utilizing an ISO/IEC 17025 methodology.

11. Values Obtained During Product Testing: This product is subjected to verification, homogeneity and stability testing using an ISO/IEC 17025 chromatographic methodology. All values obtained during testing meet criteria in accordance with ISO 17034.

12. Period of Validity: The Certified Values, Uncertainties and Expiration Date are based on the unopened product being stored according to the recommended storage condition listed and are guaranteed until the expiration date. This product will be monitored during the period of validity and customers notified of any significant changes in stability.

References:

[1] ISO Guide 31 – Reference Materials – Contents of Certificates and Labels.
[2] ISO Guide 35 – Reference Material – General and Statistical Principles for Certification.
[3] ISO 17034 – General Requirements for the Competence of Reference Material Producers.
[4] ISO/IEC 17025 – General Requirements for the Competence of Testing and Calibration Laboratories.
[5] ISO/IEC Guide 98-3:2008(E) – Uncertainty of Measurement – Part 3: Guide to Expression of Uncertainty in Measurement (GUM: 1995)